NATURE MAGAZINE

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TO STIMULATE PUBLIC INTEREST IN NATURE
ANA
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DECEMBER · 1934

FLOWERS OF THE BIBLE

Pauline Rosenberg

A DESERT NATURE TRAIL

Julia P. Ruopp

WINTERS THAT ARE REMEMBERED

Charles Fitzhugh Talman

TAURUS, A CONSTELLATION

Isabel M. Lewis

SIXTEEN PAGES OF NATURE
PICTURES IN ROTOGRAVURE

NATURE MAGAZINE

PUBLISHED BY THE AMERICAN NATURE ASSOCIATION

To Stimulate Public Interest in Every Phase of Nature and the Out-Of-Doors, and Devoted to the Practical Conservation of the Great Natural Resources of America

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Photographic Notes

BY SAMUEL BROWN

The photographic section of NATURE MAGAZINE is designed to be of service to its readers interested in photography, in particular Nature photography. All are invited to submit any problems or questions, which will be handled with dispatch. Any suggestions with respect to the conduct of this department will be welcomed by the editor.

When the naturalist decides that the camera and photography can help him in his chosen study or profession, he is faced by the problem of purchasing equipment which he will put to work and expect to be adequate for a long period of time. In order to aid such a student we are devoting a part of these notes to the type of camera which will be most useful and to other accessories necessary for photographic activities.

The ideal, all-around camera is one of the many available 2¼ x 3¼ plate cameras with a double extension bellows equipped with an F. 4.5 lens set in a compur shutter. These cameras have a ground glass screen on the back for accurate focusing. This is invaluable in procuring good pictures, especially in close work where a fraction of an inch would make a vast difference.

It is not necessary for the naturalist who already owns a regular roll film camera to discard it. For a small sum it is possible to broaden the possibilities to almost that of the one described by purchasing the *distar* and *proxar* supplementary lenses. They can quickly be attached to the regular lens. The former serves to increase the focal length of the camera lens thereby, giving a larger image at a greater distance. The latter has the opposite effect in that it shortens the focal length of the regular lens thereby, increasing the field of view to a wider angle.

For the owners of the 3 A Kodak, a typical instance occurs to us. About a year ago a friend of mine was leaving with a party on a survey trip through the Adirondacks. He consulted me concerning the equipment which he would find necessary to take along. His first complaint was that his 3 A Kodak (he said it in an apologetic manner) was an amateur's camera and would probably be inadequate. Knowing his pocketbook limitations I suggested that he alter his Kodak. For a small sum he secured a combination back with which he converted his roll film camera from an ordinary Sunday outfit to one of really practical application.

Emphasis must be placed on the tripod. It must, above all, be rigid; it must be light for carrying; it should be of the type that folds down to within a foot of the ground. With a flimsy tripod a little wind will often ruin what might otherwise be a good picture.

It is hardly fair to say that just the camera described is the only one of value on the market. For the Nature lover who goes afield with the intention of taking many pictures, the best outfit for him is the miniature type camera, such as the one using the regular 35 MM motion picture film, or the standard half vest pocket size, taking 16 pictures on a roll of 127 film. There is also the neat reflex camera which has all the advantages of the view camera without the necessity of using a tripod and the cumbersome inconvenience of viewing on the back and then exchanging the ground glass for the plate holder or pack adapter. Added to this is the advantage of seeing a constant image before and up to the moment of the exposure.

The photographer's outfit, along with his favorite camera and other essentials, although not absolutely necessary, might include a sky filter, a cable release and a lens hood.

Considering that most good picture opportunities come but once, correct exposure is one of the prime requisites. For gratifying results the first time the exposure meters equipped with the photo electric cell are the most reliable, but the cost makes them, to most of us, prohibitive. The accuracy of the visual meter depends upon the stability of the user's eyesight. Personally, I have found that the exposure calculator, for which I paid 75 cents, has given me the correct exposure under every condition.

A SCENE TAKEN WITH SKY FILTER ON ORTHOCHROMATIC FILM AT F.11, 1-25 SEC. AT TWO P.M. OF A NOVEMBER AFTERNOON

Winter Photography

With the coming of the winter season, a fascinating field of photography is opened for the enthusiast who cares to try his hand at the unusual. Photographic conditions are different and exposures are important. During December, January and February, the color of the sun is inclined to be yellow. In the early morning and afternoon hours it tends decidedly towards red. Under these conditions always increase exposure. To be on the safe side use panchromatic film. Your results will justify the slight added cost.

Many subjects will present themselves in which snow is present. Beware! Snow reflects strong actinic rays of light and during the midday hours one might be tempted to overexpose. And speaking of snow, if you are not careful the reflections may fog your negatives, ruining some excellent exposures. Some black paper and an elastic band will provide you with a practical lens shade for eliminating the danger of fog by reflection. Be careful to make the shade cone shaped so that the corners of your pictures will not be cut off.

Now is the time to take that forest scene with the snow-encrusted pines. A sunrise or sunset shot on orthochromatic film with a short exposure (1/100 sec. at F. 11) should give fine results. At this particular time such a picture is easy to take because there is a distinct contrast between the blue of the sky and the red of the sun, in which Nature is supplying you with an ideal filter.

TAKEN WITH A CAMERA WITH DOUBLE EXTENSION BELLOWS AT F.4.5, 1-25 SEC.

Miss I. S., Sioux City, Iowa: The use of panchromatic film in outdoor work was briefly discussed in our November issue; however, we intend to devote more space to this subject in the future.

Any readers of NATURE MAGAZINE that are perplexed by problems such as fall within the realm of this column and wishing detailed information are invited to forward a stamped, self-addressed envelope to us and we will devote to each inquiry our personal and prompt attention. We wish all of our readers to take advantage of this.

Cordially,

SAMUEL BROWN.

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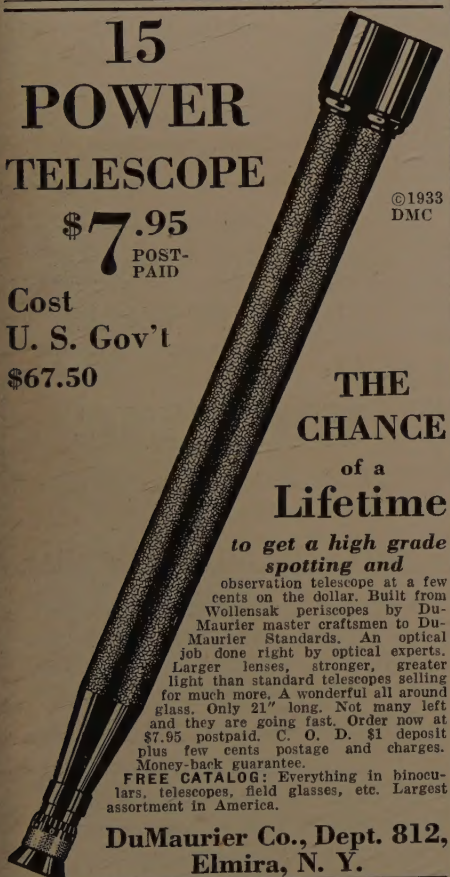

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Nature Magazine Scores

Recently the *Peabody Journal of Education*, published by the faculty of the George Peabody College for Teachers, Nashville, Tennessee, announced the results of a survey of magazine preferences of libraries in schools and colleges of education throughout the country. These librarians were sent a list of 232 titles and were asked to indicate whether any particular magazine was given to the school, purchased by the school, or purchased and bound. If the magazine was a gift, the score of "one" was counted, the score of "two" when purchased and "three" when purchased and bound. This means that if a magazine was purchased and bound by each of the 136 libraries covered the magazine would have a score of 408. In addition to the scoring, the magazines were given an A, B, and C rating. A for those most frequently purchased and recommended for the first $100 worth of magazines. B, C, and D ratings were given for magazines included respectively in appropriations for $250, $400 and $600 worth of magazines. Typical educational journals were not included and magazines scoring less than 75 points were not reported. The listing of 41 favorite and most needed magazines was:

Class A—Atlantic Monthly, 395; National Geographic, 390; School and Society, 389; Scribners, 386; Literary Digest, 384; Review of Reviews, 383; Harpers, 382; Current History, 381; Forum and Century, 373; School Arts, 357; National Education Journal, 348; Hygeia, 339; Scientific American, 332; Nature Magazine, 331; New Outlook, 321.

Class B—Asia, 291; Good Housekeeping, 281; Grade Teacher, 272; Instructor, 270; American School Board Journal, 265; Parents' Magazine, 250; American Magazine, 246; Arts and Decoration, 230; Time, 228; Popular Science, 227; Nations Schools, 214; Golden Book, 208.

Class C—Etude, 205; Child Welfare, 178; American Mercury, 177; Christian Century, 169; House and Garden, 164.

Class D—Readers' Digest, 127; Ladies Home Journal, 126; American Home, 125; St. Nicholas, 125; Popular Mechanics, 121; Country Life, 119; Child Life, 117; Saturday Evening Post, 107; Better Homes and Gardens, 106; Woman's Home Companion, 80.

Bad Zoos

It is usually our practice to pay no attention to letters sent to us anonymously. However, one recently came to hand signed merely "Nature lover" and urging action on a problem that surely merits attention. The letter referred to conditions under which birds and mammals are kept in no few of the small, poorly-equipped and inadequately financed zoos in various parts of the country. Many of these institutions have equipment and methods that are a travesty on modern methods of zoo management. If a community is not able to maintain such an activity in a proper and humane way, civic interest demands that it be abandoned. Humane organizations do not like zoos, but at least they have the responsibility, if such an improper collection is maintained in their locality, to see that it is made humane or abandoned.

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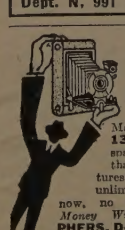

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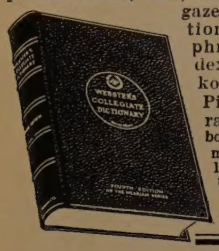

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The South Seas

To every real student of Nature, her marvels are always appealing and always wonderful, whether observed at home or abroad; whether amid the icebergs and polar bears of the Northland, or in the steaming jungles of the tropics. All such Nature lovers will find deeply interesting the newly issued volume entitled *Adrift in the South Seas*, by Thomas Murray MacCallum, just issued by the Wetzel Publishing Company, Los Angeles, at $2.00. Through the magic of its pages the reader will be able to visualize many things: white sandy beaches, quiet waters, coral lagoons, dusky natives, mat-woven hut villages, land-locked harbors, pearl divers, copra traders, cocoanut trees, barrier reefs, outrigger canoes. One may walk beneath great palm trees or amid gorgeous orchids or scarlet hibiscus, and may vary rank jungle growth with orange, lemon, banana, or guava. Again, there may be heard such terms as tradewinds and ebbtides, or one may visit such places as Samoa, Apia, Wallis Islands, Honolulu, Butantari, Gilbert Islands, or Faleali harbor. Along with all these there is a narrative of the author's personal experiences with foaming breakers, with storms, and with shipwrecks. One of the most interesting portions of the book is the chapters containing personal reminiscences of the great writer, Robert Louis Stevenson, and his family, with whom the author was long and intimately associated. All lovers of the South Seas and of its vivid and colorful life, its fishes and birds, its flora and fauna, will wish to add this volume to their book collections.

Monkey Mother

At the zoölogical park in Norristown, Pennsylvania, writes S. Cameron Corson, superintendent, a baby rhesus monkey was born this May. When the youngster was about four weeks old, Mr. Corson was standing watching the family. Mother was giving Pop Rhesus the attentions monkeys seem always giving one another and at the same time minding the baby. The latter tried to duck away but mother reached out and grabbed him, putting him down in her lap. She went to work on Pop again. Once more the little fellow attempted escape but his mother snatched him back, this time a bit more emphatically. He looked up at Pop and then tried again. This time the mother abandoned Pop, grabbed the baby and, turning him over her knee, spanked him soundly, then hugged him to her.

Bird Incendiaries

Another reason for carefully stamping out the fire in a cigaret is found in the report that small birds have frequently been observed carrying lighted cigarets in their bills—carrying them off to their nests in the eaves of buildings. It was definitely established that a fire thus originated in an abandoned theater in Rockwood, Tennessee, at the point where sparrows nested. Neighbors of the theater saw a sparrow pick up a cigaret butt and fly off with it. In the woods one is urged carefully to destroy all fire, whether of cigaret or campfire, and it might as well become a city habit also.

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WILDLIFE MISINFORMATION

Falsities Kept Alive by Wilful or Thoughtless Propaganda

"A REMARKABLE action picture of a mountain lion leaping on its unsuspecting prey in Sequoia National Park." That is the caption supplied by the large picture syndicate distributing the picture reproduced at the right. The captions used in newspapers publishing the picture placed varied emphasis on the destructiveness of mountain lions, thus lending further strength to the campaigns for the extermination of this interesting American cat.

This is a faked picture. The photograph of the deer was, to be sure, taken in Sequoia National Park by one of the motion picture companies. The photograph of the mountain lion was taken elsewhere; it is believed in a Hollywood studio. By the alchemy of motion picture technique, the two were blended and serve the purpose of wilful or thoughtless misinformation given to the public.

The mountain lion is a persecuted animal. Rarely is he accorded protection and permitted to live in the balanced existence that Nature conceived. Such protection is enjoyed only in a National Park where the so-called "vermin" of the wild world are not killed at the behest of some selfish interest. To be sure the mountain lion lives on other wild life. It may, now and then, add some domestic animal to its diet, but it offends in this regard in no significant degree. There are too few of the species left. It deserves protection as a typically American mammal.

However, the manner of life of the mountain lion is not the main text we would take from this picture. Rather does it represent misinformation, wilful or merely sensation-seeking. In principle it is akin to the annual parade of indefensible weather lore based on all sorts of "signs" from the meat on the breast bone of a goose to the squirrels' store of nuts. It is the sort of thing that constantly bobs up in the public prints to keep alive the old wives' tales about the glass snake, the milk snake, the method of birth of the opossum, and many other false yarns annually resurrected.

Such an instance has recently been given much publicity in Wyoming. In several places the story appeared recording the finding of a snake that was "a cross between a rattlesnake and a bullsnake." In fact, it was falsely asserted that such crosses were common in that State. Inasmuch as the rattlesnake and bullsnake belong to different sub-families, their crossing is practically impossible. But the sad part is that the stories, widely published and much discussed, urged that both rattlers, bullsnakes and this new "cross" all be killed on sight.

The bullsnake is a valuable snake. It does yeoman service in keeping gophers and other rodents in check. On the Pacific Coast farmers know the value of this reptile, and the more of them they can have on their property the happier they are. Nevertheless, the bullsnakes of Wyoming are in for a bad time because of misinformation. Also, it is probable that the reported "cross" is a hog-nosed snake, another reptile valuable in Nature's economy. This snake has the capacity of flattening its neck and assuming a most menacing attitude. It is, however, utterly harmless.

Wide publicity is always given to these items of misinformation. The front pages last winter told of wolves roaming in northern New York. They proved to be wild dogs. Frequent are the tales of vicious and hitherto unidentified animals terrorizing whole villages. They always turn out to be figments of the imagination, or a dog or cat that has reverted to its ancestral habits.

Nature faking still goes on. Much of it emanates from Hollywood, and while it may be good "theater" it detracts seriously from the sum total of accurate human knowledge. In many cases it may be harmless, but in many other cases such misinformation does a dangerous injustice to valuable forms of wildlife and further complicates the already difficult problem of wildlife conservation.

POKER FACE

Reproduced from an Original Etching

By DIANA THORNE

NATURE MAGAZINE
VOLUME 24 · DECEMBER · 1934 · NUMBER 6

WATTEAU'S PAINTING OF WINTER

Winters that Are Remembered

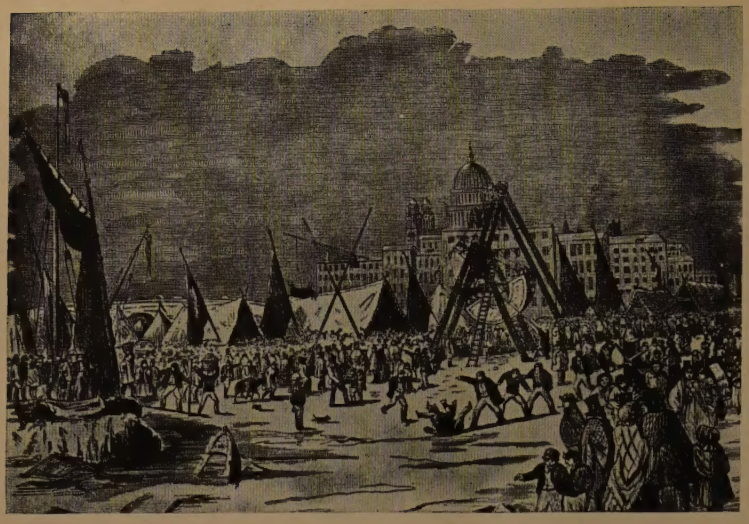
The story of some historic cold spells, including some that were rather mild

By CHARLES FITZHUGH TALMAN

I DO NOT know how many Americans, who read in their schooldays about the miseries endured by Washington's soldiers at Valley Forge in the winter of 1777-78, grow up harboring the idea that the winter in question was one of extreme severity. I have a friend who did. Being of an inquiring turn, he ultimately sought the hard, "cold" facts on the subject, and was surprised to learn that, so far as can be judged from the meager thermometer records available, the "Valley Forge winter" was just an average winter for that part of the country.

The winter of 1812-13 in Europe lives in history as the one that caused frightful suffering and thousands of deaths in Napoleon's army, fighting its way back from Moscow. That famous retreat began, however, in mid-October and ended in early December, and during a large part of it the weather was unusually mild for the season. There were some spells of extremely bitter weather, but they would have claimed few victims if the remnant of the once magnificent army had not been woefully deficient in clothing, food and discipline.

It is easy to misjudge the character of a bygone winter from some of its more striking effects. Meteorologists themselves fail to agree when they attempt, on the basis of actual readings of thermometers and other weather instruments, to find out just how severe some recent winter was in a specified locality, and how it compared in severity with others, because there are no generally accepted criteria for deciding such questions. Some authorities



THE LAST FROST FAIR EVER HELD ON THE THAMES RIVER

A drawing of the festival in February, 1814, published in "Famous Frosts and Frost Fairs in Great Britain," by W. Andrews

think that winter severity should be gauged from the average temperature of the season as a whole; others give weight to the frequency and intensity of cold spells; while still others take account of heavy snows and high winds, as intensifying the harmful effects of winter weather.

Of course it is still more difficult to determine the real character of the winters of long ago, when instrumental observations of weather were made in few places, or had not been undertaken anywhere. Our ancestors of a few centuries ago not only had no thermometers, but had not yet conceived the idea of temperature as a thing susceptible of measurement. They had no better means of comparing intensities of cold than we now have of comparing intensities of smells, and thus the statements often found in old writings to the effect that a certain day or other period was the coldest ever experienced in a particular region are quite unreliable.

Probably the most successful attempt ever made to trace the history of severe and mild winters over a long period of time was that of a Dutch meteorologist, the late Dr. C. Easton, who published a book in 1928 in which he summarized all the best evidence obtainable from histories, chronicles, diaries and various other sources concerning the winters of western Europe from before the Christian era down to recent years. He also devised a fairly plausible method of rating each winter on a numerical scale of severity.

The most rigorous winters of all, as determined by this investigation, are classified as "great winters." To this group Easton assigns positively the winters ending in the years 1408, 1435, 1565, 1608, 1709 and 1830, and he mentions two or three earlier winters as possibly belonging in the group; especially that of 1763-4, of which much is said in the chronicles. The worst winter in Easton's list is supposed to have been that of 1407-08, with that of 1607-08 as a possible rival.

There is a good deal of sameness about the descriptions of severe European winters that have come down to us from past centuries. The cold was intense enough in many cases to kill vines and fruit trees on a wide scale. Both cold and hunger often took heavy toll of human life. A hard winter generally caused a marked rise in the price of grain. There was often immense destruction of wild animals, birds and even fishes. Hungry wolves entered villages, where they devoured human beings and cattle. Trees and rocks burst with the noise of a gun. Wine and ale were frozen, so that, as Holinshed says of one case, they "were sold by the pound weight and then melted against the fire." Some winters are remembered for tremendous snowfall, though the figures given for the depth of snow are not to be taken too seriously. The melting of snow and ice in the spring often resulted in disastrous floods.

The best evidence of extremely cold weather afforded by these early descriptions relates to the freezing of large rivers and other large bodies of water, including the Zuider Zee, which became temporary highways for men and wagons. In such cases fires were lighted and sports held on the ice, and occasionally a village of booths was erected, in which

COLD WEATHER AT THE CAPITAL

When the Weather Bureau kiosk was a Pennsylvania Avenue landmark

SUCH A SCENE AS THIS IS RARE IN VENICE

Deep snow on the Square of St. Mark's during the severe winter of 1928-29, when people feared that the Ice Age had returned

COURTESY F. S. ZANON

took place a "frost fair." The Thames, at London, was the scene of several such fairs.

In January, 1565, Holinshed records that "the people, both men and women, went on the Thames in greater numbers than in any street of the City of London." There were sports on the river, in which members of the court took part. The first great frost fair on the Thames, however, was that of January, 1608, when many booths and tents were set up on the ice for the sale of food and liquors, and some are said to have had fires in them. The fair of 1683-84, which lasted from the beginning of December to the 5th of February, is described in Evelyn's Diary. King Charles, with members of his family and of the royal household, visited the sports on the river and had their names printed on a quarto sheet of Dutch paper, which is still extant. Another fair was held in the winter of 1688-89. During the one of January, 1716, it is recorded that an uncommonly high tide, which flooded cellars on the banks of the river, raised the ice fully fourteen feet without interrupting the people in their amusements. Similar fairs were held in 1740, 1788-89 and 1814. The last was one of the gayest and most elaborate of these events, though it lasted only four days. One writer says of it:

"The grand mall or walk was from Blackfriars Bridge. This was named the City Road, and lined on each side with tradesmen of all descriptions. Eight or ten printing-presses were erected and numerous pieces commemorative of the great frost were actually printed on the ice." A sheep was roasted and shilling slices of it were sold under the name of "Lapland mutton." Music and dancing added to the merriment, while swings, merry-go-rounds and skittles were among the amusements.

The winter of 1666-67 was known in Germany as the "double winter," because the rivers were frozen twice. January was cold, February was snowy, but the most severe cold occurred March 18-26. The Zuider Zee was full of ice, and at Amsterdam people crossed the River Y on foot, while elsewhere in the Netherlands the frozen rivers could be crossed by wagons. Nobody could remember such cold weather so late in the season. In England the winter was not severe, but the spring was intensely cold. On March 6, Pepys wrote: "The weather, too, being become most bitter cold, the King saying today it was the coldest day he ever knew in England"; and again on March 7: "This day was reckoned by all the people the coldest day that ever was remembered in England."

In England the cold winter of 1837-38 has ever since been famous as "Murphy's winter"; whereby hangs the following tale: Daniel Murphy published a "Weather Almanac," in which, among a number of vague and haphazard prophecies, he stated that the lowest temperature of 1838 would probably be experienced on January 20. That day turned out to be the coldest England had known for generations, and the prophet became a celebrity overnight. People flocked to the booksellers to buy copies of his almanac. The edition was soon exhausted and this work actually underwent more than fifty reprintings to satisfy public demand. Meteorologists have since compared the daily predictions in Murphy's almanac for 1838 with the weather that prevailed day by day during

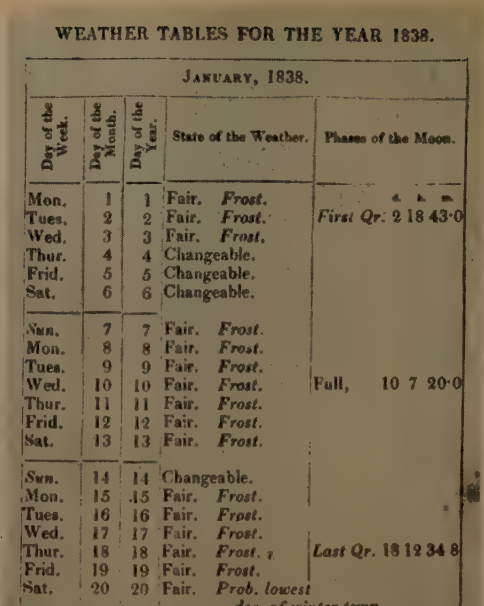
DIGGING OUT A STALLED TRAIN

This was common during our severe "war winter" of 1917-18, when supply movement was hampered by the weather

that year in London. The announcements for 197 days were decidedly wrong. The others were wholly or partly right, but were mostly as indefinite and elastic as almanac weather predictions are wont to be. One lucky guess made the author immortal, and, incidentally, rich.

The most remarkable recent winter in Europe was that of 1928-29, in which heavy snow fell along the shores of the Mediterranean and records for low thermometer readings were broken at many places in central Europe. The severe weather caused a vast amount of suffering and gave currency to some wild rumors concerning its cause; one of which was that the Ice Age had suddenly returned.

No winter in the United States is ever similar in character all over the country, and it often happens that an abnormally cold winter in the East coincides with a decidedly mild one in the West, or vice versa. A list of "historic" periods of severe winter weather in North America east of the Mississippi should doubtless include the following:



WEATHER TABLES FOR THE YEAR 1838.

JANUARY, 1838.

Day of the Week.	Day of the Month.	Day of the Year.	State of the Weather.	Phases of the Moon.
Mon.	1	1	Fair. *Frost.*	d. h. m.
Tues.	2	2	Fair. *Frost.*	*First Qr.* 2 18 43·0
Wed.	3	3	Fair. *Frost.*	
Thur.	4	4	Changeable.	
Frid.	5	5	Changeable.	
Sat.	6	6	Changeable.	
Sun.	7	7	Fair. *Frost.*	
Mon.	8	8	Fair. *Frost.*	
Tues.	9	9	Fair. *Frost.*	
Wed.	10	10	Fair. *Frost.*	Full, 10 7 20·0
Thur.	11	11	Fair. *Frost.*	
Frid.	12	12	Fair. *Frost.*	
Sat.	13	13	Fair. *Frost.*	
Sun.	14	14	Changeable.	
Mon.	15	15	Fair. *Frost.*	
Tues.	16	16	Fair. *Frost.*	
Wed.	17	17	Fair. *Frost.*	
Thur.	18	18	Fair. *Frost.*	*Last Qr.* 18 12 34 8
Frid.	19	19	Fair. *Frost.*	
Sat.	20	20	Fair. *Prob. lowest deg. of winter temp.*	
Sun.	21	21	Changeable.	
Mon.	22	22	Changeable.	
Tues.	23	23	Changeable.	
Wed.	24	24	Rain.	
Thur.	25	25	Rain. *Wind.*	New, 25 13 51·5
Frid.	26	26	Fair.	
Sat.	27	27	Fair. *Frost.*	
Sun.	28	28	Fair. *Frost.*	
Mon.	29	29	Changeable.	
Tues.	30	30	Rain.	
Wed.	31	31	Fair. *Frost.*	

WHY IT WAS CALLED "MURPHY'S WINTER"
A page from Murphy's Weather Almanac for 1838, containing the famous prediction for January 20

1717. The "great snow" of this year is celebrated in the history of New England. It fell from Feb. 19 to 24 and lay for a long time from 5 to 6 feet deep at Boston and elsewhere. The winter was extremely cold.

1740-1741. Long remembered in Virginia as "the cold winter." In early March, Long Island Sound was frozen over so that people rode from Stratford, Conn., to Long Island.

1779-1780. Possibly the coldest winter in the history of eastern North America. Thomas Jefferson says: "The Chesapeake Bay was frozen solid from its head to the mouth of the Potomac. At Annapolis the ice was 5 to 7 inches in thickness, quite across, 5¼ miles, so that loaded carriages went over it." Immense snowfall in New England and eastern Canada. Bayou St. John frozen at New Orleans.

1835. Very cold winter, beginning with January. On Feb. 8 temperatures below zero everywhere north of Savannah and Natchez; also in the interior of northern Florida. Snow lay on the ground from December to May in parts of New England, and two whole months at Washington, D. C.

1856. First three months excessively cold in the middle latitudes in the United States. Chesapeake Bay at Annapolis closed by ice Jan. 8-March 14. Baltimore and Philadelphia harbors closed until late in March. Long Island Sound closed to navigation Jan. 25-Feb. 27. Ice formed in the Mississippi as far south as Vicksburg.

1880-1881. Unusually long and severe winter everywhere east of the Rocky Mountains.

1886. The cold wave of Jan. 6-12 was one of the most severe on record, especially in the southern United States, where there was immense damage to fruit and agricultural crops.

1899. Unprecedented cold wave February 11-13, with zero temperatures reaching the Gulf coast. Mobile, Ala., recorded 1 degree below zero; Vicksburg, zero; Washington, D. C., 15 degrees below; New York, 6 degrees below; St. Louis, 19 below; Chicago, 21 below; Ottawa, 24 below; Toronto, 12 below; Montreal, 13 below. New Orleans had 2 inches of snow and the river was filled with heavy floating ice for a week. Heavy and widespread snowfall over the eastern United States.

1912. Persistent severe cold weather during the first three months of the year caused an unprecedented formation of ice in lakes and rivers in the northern United States and Canada. For the first time on record Lake Superior was frozen from shore to shore, so that moose crossed on the ice from Canada to the United States. Lake Michigan and Lake Erie were also completely spanned with ice in some places.

1917-1918. The "war winter." An excessively cold and snowy winter east of the Rocky Mountains, while warmer than the average in the far West. Especially memorable on account of aggravating the economic difficulties arising from the World War through frequent interruption of transportation services.

1933-1934. The winter became "old-fashioned" toward its close, breaking cold weather records at several places.

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In the January issue of Nature Magazine John L. Blackford gives us another delightful Nature story, a companion to "White Corsair of the Arctic" published in November. Besides being delightfully written, Mr. Blackford's articles contain a wealth of information reflecting his faculty for keen and accurate observation.

A Desert Nature Trail

By JULIA P. RUOPP

DO YOU know what makes a desert? Why a desert? No? Neither did I until I had to live on one last winter. When I first saw it I would have described a desert as a place of sand, grubby bushes and stickery weeds, all most uninteresting looking, barren and dried up. Even as a Nature lover I failed to see any attractions that first day except the changing lavender shadows upon the surrounding mountains.

Little did I know—indeed, nothing did I know then. But my ignorance fortunately, was not of long duration. By evening of my second day, I had heard of "Ted." The two children in the next-door cottage, returning from school, ran to their mother shouting, "Hey, Mom, what do you think? Ted brought his fox to school this morning for his Nature Talk. Gee, it's a beaut—with a gorgeous bushy tail." And the older boy with them said, "Yes, and he's going to take the Scouts on a discovery hike tomorrow."

Then I did prick up my ears. If the Scouts were taking Nature hikes there must be something to discover or they would not be interested in going. In that case perhaps this Ted person would not be averse to enlightening a "fair to middlin'-aged" Girl Scout. By noon of the next day I had heard more of "Ted," as the whole village of Palm Springs affectionately calls him. By afternoon we had met—a dramatic introduction.

My sister and I had been canvassing the town to find a suitable apartment for a convalescent friend who was coming soon to California. We approached the entrance of an attractive hotel and stood talking before we rang the bell. Glancing through the doorway to the large patio and cottages inside, I said, "There's no use going in here because she couldn't afford this anyhow. Looks too expensive."

A voice seemingly emerging from the air interrupted me. "Well now wait a minute. Don't be too sure. Wait until I come up."

"But where are you?" my sister and I asked together, peering about us in amazement.

"Under the century plant on your right," spoke a pair of voices.

Feeling as though we had dropped into the midst of an Arabian Nights Tale we discovered two pair of masculine feet sticking out from under the bottom of the large century plant at our side.

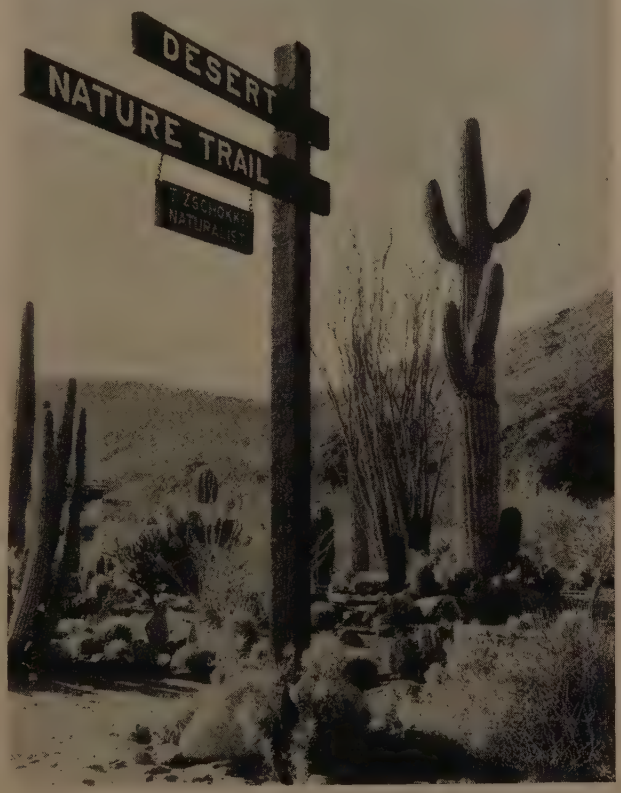
"For goodness sake what are you doing there?" I asked, feeling slightly dizzy.

"Getting babies," chuckled one.

"Getting what?" we both gasped.

"Getting century plant babies. Wait a moment and we'll show you."

And with an effort the two men crawled out, gently and carefully cradling baby century plants in their hands. They were the hotel manager and his friend, "Ted." In this manner we met Ted Tschokke, a slight looking young man, scarcely more than a boy, but not at all slight in his knowl-



THE SIGN AT THE START OF THE DESERT TRAIL

It is the beginning of a fascinating and revealing walk which teaches much about the desert and its dwellers. At the left a baby cottontail rabbit poses, and, at the right, is a pack rat, one of the many little inhabitants of the dry places and one of the Nature Trail residents

edge of the desert and its mysterious unseen ways. What he told us in those first few minutes about century plants and their ways—but there, that is another story entirely.

He had been compelled to come to the desert to seek relief from asthmatic difficulties. His scientifically trained and eager mind immediately began to study the life he found about him. After a year and a half of recuperation, observation and study, he wanted to share his discoveries. So enthusiastic was he about desert life, so unique were his ways of presenting it to the public, that it wasn't long before all the village and its many visitors knew him.

QUITO, THE GRAY FOX

He is too shy to let one admire him for very long. Below is the exhibit along the Trail showing graphically the problem of moisture in desert regions and explaining the adaptation of desert life

Wanting to make it possible for school children and the visitors from all parts of the world to see and perceive for themselves how fascinating was the Nature-life on a desert, he said to himself, "Appreciation for the desert can most easily come through learning something about the common things on the desert." Laboriously his plans grew. With small funds and not a great deal of strength, the prospects sometimes seemed impossible and the task overwhelming. But building upon the principle that a small beginning was better than nothing at all, the evolution of the present "Desert Nature Trail" is the result. He has adequately made visible a composite view of the desert which hundreds of people will never forget.

The trail begins in a cactus garden, owned and loaned by public-spirited citizens of Palm Springs. A winding path, not more than five hundred feet in length, takes us along a cunningly conceived section of the desert where have been collected plants, animals and flowers—all living in their natural surroundings. Let us follow the trail with the Naturalist and learn about the desert as we go.

Those of us who know little about the desert are amazed to discover the fascinations of the various varieties of cactuses. Here we see many of them, from the small beaver cactus with its flat beaver tail joints and rose-like flowers, to the giant cactus, a native of Arizona. The candle or torch cactus grows in bunches and tapers gracefully, like its namesake, to a red flower flame at its very tip. Signs warn us not to touch any of the cactuses, for their prickles are most unfriendly, especially the round spiny imps that live on the arms of the silver cholla. These have the deceitful habit of dropping off the branches of the fearful looking bushes at the slightest touch and of sticking deeply into one. They also "jump" from one part of you to another until they find a soft place to become firmly imbedded.

Here the Naturalist points out that even though we have no use for these sticker imps, the desert rat could scarcely get along without them. To him the ball-like cactus buds are food, drink and protection. Where this cactus is common, you will often find a boulder which is surrounded with bushels of stickers. This will be the nest of the desert rat. These fearful thickets surround the entrances, and behind this he is safe from coyotes, kit foxes, badgers, hawks and owls. Nor would we ever dream that a big-eared, large and black-eyed, rather serious looking hermit would choose the cactus itself for his home. But that is exactly what the hermit rat has done. If you look closely, you can see his burrow under the cholla bush and the runways that he has made for himself along the stems through the bush to his snuggery where he calmly eats his meals of cactus fruit and buds, able to see, but completely unseen by the hungry owl that flies by, always on the alert.

The Joshua tree attracts our attention with its sign,

"Joshua Tree like a true desert lover has its arms uplifted As if to thank its God, the sun, for the treasures of the desert—
Quiet, color, spaciousness and freedom."

It is of the lily family and is not only the largest in its family, but in the desert where it grows, it is the largest tree. It has the ability to form its own scar tissue where it has been gnawed by desert animals for wood pulp.

A turn in the path brings us a graphic answer to the question, "What is a desert?" By means of simply worked out devices we have illustrated for us the "water budget

fight," the fight that the desert plants must continually wage for the water they need. We see the correct official temperature, and the sun temperature; the great difference between the rainfall on the desert and the evaporation. If in one year three inches of rain fell, as much as fifteen feet of water would have been evaporated if it had been present. Therefore plant life on the desert has one part of moisture to fifty parts of heat and wind, and thus has to contend with the difference between the drying force and the water supplied. But, logically, Nature has made plants in this region so that they are adapted in many ways to resist drought, whereas they would die in a moist place.

A barrel cactus, for instance, can grow and bloom for three years after it has been uprooted, by living on the water it had stored up inside. We see by the path an uprooted cactus blooming beside a normal growing cactus and three gallon jugs of water to illustrate for us the amount of water contained therein. Thirsty desert rats, jackrabbits and bighorns get their extra water from this handy barrel when rainfall is too scarce.

TED TSCHOKKE HIMSELF
The young Naturalist who dreamed of the Trail and who made it a reality

Now we can see "why is a desert." Much wind, great heat, intense sunlight and little rainfall, all combine to increase the evaporating power of the air and to decrease the amount of water in the soil.

Our next sign tells us about Waffles.

Waffles the Tortoise
Lives under this tree
And though he's not handsome
He's nice as can be.

He never snaps at fingers
Or stamps on people's toes
And though he disdains questions
He always holds his pose.

He lives in the desert
Where it's really very dry
And he's never been in swimming
And would not even try.

When he is thirsty
He waits until it rains
And then drinks a year's supply
Or till his tummy pains.

When he is hungry
He eats flowers by choice
And even eats cholla
Which doesn't bother his voice.

If he gets cold
As the winter draws near
He crawls into his hole
To sleep a third of the year.

And then in the summer
When the rocks are all hot
He gets into the shade
And sleeps till they're not.

He does not answer to his name
And neither would you or I
For scientists call him
Gopherus agassizi.

Waffles accommodatingly let us drag him out of his cave to take his picture. We find his nearest neighbors when we lift a large board—several pale, shiny, yellow scorpions and an assortment of beetles. A hundred species of plants and flowers hold our interest, for we would never have imagined that there were half that many to be found in a desert, and the Naturalist explains that he expects to find more. Many of them we can find for ourselves. On the rock fans that lead up to the slopes grow many bushes of the desert honeysuckle. Its orange red flowers are a showy contrast with the rest of its plant neighbors. The delicate almond-like blossoms of the thorny desert apricot; the purple bee sage; the incense bush, and most of the cactus are able to bloom in a brazen manner as though there were no such thing as a drought.

The menagerie introduces us to "Prunes," the little spotted desert skunk; the cunning little antelope squirrels who live on the ground, have a call like a song bird, and a body like a chipmunk with the bushy tail of a squirrel; pocket mice, kangaroo rats and pack rats; "Quito," the gray fox too shy to let you admire him for long; and the desert reptile family, consisting of a Texas diamond-backed rattler; a family of "side-winders," lizards and chuckwallas given him by Scout enthusiasts and neighboring Indian boys.

We arrive at the end of the trail and the donation box, a slender means of feeding the "beasties," astonished that so much desert life and information can be collected and displayed in so short a space, and filled with admiration for the one who, overcoming all handicaps, has devised it. Nor is he content to stop with this. He writes weekly Nature Notes for the local papers to the delight of the children; he discovers the haunts of the deadly black widow spider and instructs those who are interested how to keep rid of them; and he rubs the scales of Nature-blindness from the eyes of the tenderfoot children at Deep Well and Smoke Tree Ranch Schools. The last I heard from him he was making plans for additions to his present museum in the form of an Indian Trail with an Indian Village. All true Nature lovers cannot do other than to wish him well and perhaps there will be others who will go and do likewise for their own communities.

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When we think about gathering a collection of shells we usually consider a trip to the seashore. But not all the beautiful shells are to be found on the beach. Many are to be discovered on the mountainside trees in Hawaii. They are snail shells. Major Charles L. Steel, when he can spare time from running his part of Uncle Sam's Army, likes to go Nature collecting. One of his hobbies is land shells and he tells us about them in the January issue of Nature Magazine.

THE MUSEUM OF BIBLICAL BOTANY AT THE HEBREW UNIVERSITY IN JERUSALEM

Here the specimens collected by Dr. Ha-Reubeni are displayed. He has also completed a monumental work, illustrated in color, based on his studies. This is to be published in Hebrew but there is the hope that publishers will also see the possibilities of an English edition

FLOWERS OF THE BIBLE

They grow today as they did in ancient times

By PAULINE ROSENBERG

One must visit Palestine to realize how close the Bible is to Nature; how the land in all its changing aspects—the animals, the birds, the trees, and the flowers of the Holy Land—are reflected in its pages.

The Bible is full of allusions to flowers and plants, but how much do they mean to the average reader? When he reads in the Song of Songs, "I am the rose of Sharon and the lily of the valleys," or, in the New Testament, "consider the lilies of the field," do these lines call up any definite picture? And if so, is it a picture of flowers as they actually grow in Palestine? How much more these lines would mean, if we could see the flowers referred to!

Dr. Ephraim Ha-Reubeni, now Professor of Biblical Botany at the Hebrew University in Jerusalem, decided many years ago to go to the fields and valleys, the hillsides and meadows of Palestine to find and identify the plants mentioned in the Bible. This was no small task. It required not only a thorough knowledge of botany, but a keen understanding of Hebrew philology, a true scientist's curiosity and patience, and a poet's enthusiasm and imagination.

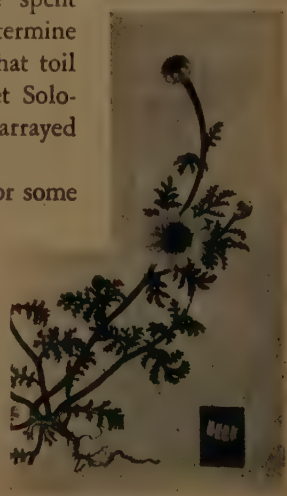
In addition to all these gifts, Dr. Ha-Reubeni has a wife whose interest in the subject is as keen as his own, and who not only has shared the labor of collecting and analyzing, but who contributed a special talent that has made it possible to pass on to others in the most vivid possible form the information they have gleaned. For Mrs. Hannah Ha-Reubeni invented a remarkable process of preserving flowers in their natural form and color, so that they appear almost as though they had been freshly picked.

The results of years of devoted effort on the part of these two plant lovers and experts are seen today in the Museum of Biblical Botany at the Hebrew University.

Here one can see the real rose of Sharon, a plant still to be found in all its beauty on the flat plain of Sharon that lies along the Mediterranean coast. The term "rose," however, is a mistranslation. It is not a rose, but a tulip, *Tulipa montana,* a showy, deep red flower with a black center. It belongs to the lily family and may well be called "lily of the valley," though it bears no resemblance to the modest white flower we know by that name.

On the other hand, the flowers called "lilies of the field" in the English version of the New Testament (Matt. vi, 28-30 and Luke xii, 27-28) are not lilies. Dr. Ha-Reubeni felt certain that the reference must be to some specific flower and he spent years of research trying to determine just what were these lilies "that toil not, neither do they spin—yet Solomon in all his glory was not arrayed like one of these."

Most scholars had sought for some



THE COMMON DAISY FOUND IN THE FIELDS OF THE HOLY LAND

It is believed that this, rather than some showier flower, is really the one referred to in the passage about the lilies of the field

THE ROSE OF SHARON IS NOT A ROSE

It is, instead, *Tulipa montana,* a tulip with a showy, deep red flower with black center

flower of showy size and color, red or purple, perhaps, like the royal robes of Solomon. Dr. Ha-Reubeni thought this was a mistake, since the words of Jesus, "And yet I say unto you," would seem to indicate that he was referring to some more modest flower, whose beauty was not so apparent but must be pointed out to his listeners. Such a flower would be more in keeping, too, with the esthetic taste of Jesus. Among the most ancient translations of *Krinon agrion* (lilies of the field) Dr. Ha-Reubeni found that of Dioscorides, who translated it *Abib labon,* an ancient Hebrew name meaning "white flower." Furthermore, according to Dr. Ha-Reubeni, not enough attention has been paid to the verse, "If God so clothe the grass of the field, which today is, and tomorrow is cast into the oven."

The use of the term "grass," and the phrase about casting into the oven, as well as esthetic and philological considerations, led him to the conviction that the flower referred to is the common daisy, *Anthemis palestina,* which dots the fields of Palestine after the rains. The flower, Dr. Ha-Reubeni points out, is "beautiful at all hours of the day, even when old and drying. When it has dried up, it is gathered with the dried grass and cast into the furnace." And, he further reminds us that "the daisy has a crown, which gives special aptitude to the comparison with Solomon, the crowned king."

The Hebrews, like the Greeks and Romans, borrowed many of their art forms from plants and flowers. The seven-branched candlestick, which has come down through the ages as a traditional Jewish symbol, and is known to the world at large through its representation on the arch of Titus in Rome, may be here traced to its lowly origin in the sage plant, *Salvia,* found in the mountains and hills of Palestine. This plant, it is seen, has almost exactly the form of the sacred candlestick, with its central stalk, from which symmetrical branches curve upward on either side. On each branch are seen "knops"—that is, "buds" or "knobs"—and flowers, such as those mentioned in the description of the candlestick wrought of gold for the tabernacle (Exod. xxxvii, 17-22).

Many Hebrew personal names are taken from names of plants. Interesting examples are shown of well-known Biblical names derived in this way, such as Rimmon, meaning pomegranate, and Tappuah, apple. The name Korah, which occurs so frequently in the Bible, is also the name of a plant. The word *korah* in Syriac and Aramaic means "bald-headed" and it was formerly supposed that the men bearing this name were so called because they were bald-headed. Dr. Ha-Reubeni considers it improbable that a mother would give her son this name. He thinks the child was simply named after the flower. Why the flower was so named is apparent from one glance at it. The plant, identified as the *Matricaria aurea,* or feverfew, is almost exactly like the common daisy, already referred to as the "lily of the field," except that the greenish yellow flower head is not surrounded with rays. It is literally "bald-headed."

In addition to plants mentioned in the Bible and in the Talmud, there is a section of Jewish and Arab Plant Lore, showing many plants used in medicine and industry and others connected with the folklore of these peoples. For instance there is the *Thymelaea hirsuta,* from which the Bedouin makes a rope (*hurdj*) to fasten jars of water

SALVIA IS THE SOURCE OF SYMBOLS

The seven-branched candlestick is patterned after it and is a traditional Jewish symbol

or packs of various kinds atop his donkey or camel.

One of the plants often mentioned in the folklore is the Dead Sea fruit or apple of Sodom, *Solanum coagulans*, found near Jericho. This plant bears purplish flowers and fruits like small apples. When an insect has entered this fruit and fed upon it, the inside is reduced to dust, and then the fruit, just as the stories tell, literally crumbles at a touch.

Among poisonous and medicinal plants are the leadwort, *Plumbago europaea*, and the caper, *Capparis spinosa*, the latter, with its white petals and long fringe of purple stamens, often seen hanging from walls and rocks in and about Jerusalem. Another group comprises poisonous plants used by the Arabs to catch fish. Included among these is the cyclamen. This plant, with its dainty flowers poised gracefully on their stems, their turned-back petals exactly the color of orchids, would seem to be destined for more esthetic purposes than the stupefaction of fish.

The life history of many plants is traced through various stages of development—the seed, the tiny plant, bud, blossom, fruit, and seed again. In many cases, too, we are shown the insect whose life is bound up with that of the plant. Some flowers last but a day and their life history is told hour by hour.

We acclaim the archeologist for every fragment he turns up that gives some clue to the history of those days that produced the Bible and have had so great an influence upon the world. But, after all, he works with dead things. Professor and Mrs. Ha-Reubeni, in the Museum of Biblical Botany, work with living things—plants that flourished in the days of Solomon and of Jesus and are still growing today—not only making the Bible more real, but giving us a wonderful sense of the continuity of life and of the comforting fact that truths are eternal.

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Kate Becomes a Mother

By WILLIAM H. EDWARDS

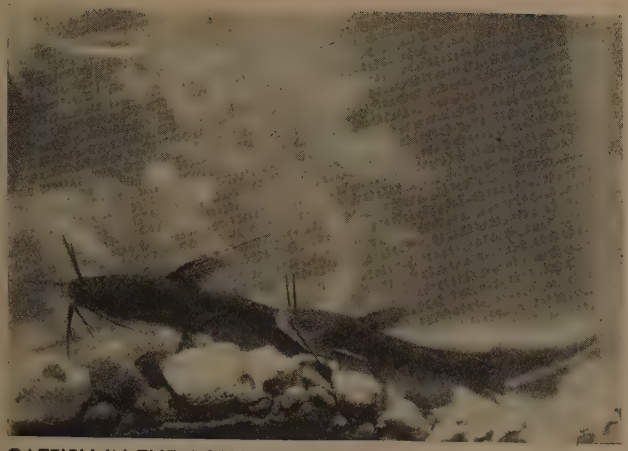
KATE, whose life has been full of tragedies, is now a happy mother swan. Mating has been most difficult. It has taken eight swans to hatch three cygnets.

In 1925 two gorgeous white swans were presented to me. I was most eager to see these swans, some day, with their babies sailing majestically over the waters of Green Pond at Sherman, Connecticut. Nothing developed over a period of five years so two additional swans were purchased. One day the four flew away, their wing feathers had grown faster than we anticipated and they lifted themselves from the water and were on their way. It took several days to find them. An ignorant hunter had killed one—as the result of his shooting Kate was left with a broken wing and the other two were never recovered. Kate took her place on the lake again—lovely indeed. A mate was attempted but he walked out—deserted her. Not dismayed I purchased another but it died of pneumonia on the ice near a running brook. Again I sought the perfect mate. The newcomer brought hope. Kate made her nest. Both swans sat on the nest and shortly eight eggs were being warmed for what I dreamed would be cygnets. Forty-five days passed. No new sign of life appeared in the nest. I let them sit longer. Finally when both swans were off the nest an expert examined one of the eggs—yes, all of them, and none was fertile. Upon close examination much to my surprise and to the amusement of everybody the expert discovered that the new swan was a female. What a calamity.

The expert then resolved to superintend the selection of the next swan. Finally from Milwaukee came a real mate, who became the father of these cygnets. Kate made her nest, laid five eggs and up and down the shore of the lake alongside where Kate was setting patiently, the male swan patrolled the beach against all comers and he would hiss and rush towards a person in a boat or on the shore, with his feathers ruffled up. Surely a real protector. When I told the expert of this he said "Kate will surely produce babies as there is every evidence on the male's part of a perfect union."

Yes—three cygnets came—two of the eggs were not fertile. What a lovely sight to see Kate with her babies. They took to the water the second day. What a parade it was. The papa leading—then the three swannies—then Kate close behind. Grander still was the spectacle to see two of the babies climb up on Kate's back and try to conceal themselves under Kate's broken wing.

Such happiness could not last. One of the little cygnets died and another a few days later. Some water animal or a snapping turtle made an attack upon its neck. The last remaining one is strong and healthy, growing larger every day. Let's hope he lives to be eighty years old as they say swans do.

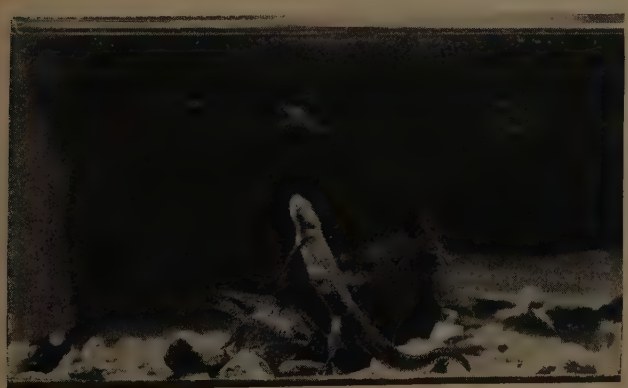


CATFISH IN THE AQUARIUM

Below, the flashlight set-up recommended for photographing the aquarium residents

A PHOTOGRAPH OF DRAGONFLY LARVA

Below, two spotted newts pose nicely in their aquarium and are photographed



Picturing Fishes

By HUGH SPENCER

AMATEUR photographers who are also fish "fans" have tried, often unsuccessfully, to photograph their finny pets. For those who have tried and failed, as well as those who haven't tried but want to, the following suggestions may be helpful.

Flash bulbs are undoubtedly the most satisfactory source of illumination for indoor aquarium photography. They can be used quite close to the aquarium without danger of injuring either the tank or the fish.

That most common fault—reflected lights on the surface of the glass—is easily overcome by directing all of the light into the tank, either from above or from the sides. This may be accomplished by the use of a hooded reflector such as an ordinary desk lamp, or the regular flash bulb reflectors. A dark screen or cloth in front of the camera, with a hole just large enough for the lens, is also helpful.

Focussing is done by using an ordinary light bulb in the reflector. This should be adjusted to give the best illumination to the tank and still not throw any light on the lens, and also where it will not itself be reflected on the front of the aquarium. When ready for the exposure replace the light bulb with the flash bulb.

On the inside of the aquarium place a sheet of glass as a partition to keep the fish close to the front and within the focus of the camera. Wooden spring clothes-clips are handy things to hold this in place. Both the glass partition and the front of the tank must, of course, be as clean as it is possible to get them. The water also should be as pure as can be obtained.

In most cases it is best to keep accessories, such as water plants, well back of the partition. I have found gravel and small stones better than sand for the bottom as less likely to be stirred up by movement of the fish.

If the fish are camera shy and sulk in the corners they may be gently prodded with a smooth strip of wood until they reach the desired position. The exposure should be made while the fish are quiet or nearly so, as flash bulbs are not instantaneous enough to catch rapid motion.

Small fish, tadpoles and aquatic insects may be held in place against the side of the aquarium by the use of watch glasses, or better still, the rectangular, convex glasses such as are used in miniature frames. A simple wire frame like that shown in the illustration will hold the glass in place and strips of wood or cork placed under the edges if it comes too close. Either dark or light backgrounds may be used behind the aquarium. Light grounds are less likely to show impurities in the water and defects in the glass.

The aquarium may also be photographed from above by placing the camera in a vertical position above it and following the same general rules. Specimens may also be photographed in a glass bottomed tray made of plate glass with the sides built up out of Plasteline.

The pictures accompanying this article were all made on portrait panchromatic film with the diaphragm set at F. 16. For the spotted newts one flash bulb was used in a reflector just above the tank as shown in the illustration, and the same for the catfish. Both negatives were slightly overtimed. F. 22 would probably have given a fully-exposed negative. The water insect was made with a 500-watt lamp at sixteen inches from the aquarium and an exposure of one second.

Although panchromatic films or plates are the best for aquarium work any fast emulsion will give good results if used rightly.

Flying Blind

By MARY ALICE PARENT

LIKE aviators "flying blind"—depending upon radio beams for guidance—a blind pigeon belonging to T. E. Berry of Inglewood, California, receives direction to his nest by a system of soft signal coos in one of the strangest love stories ever told of feathered animals.

Rivaling tales of Heloise and Abelard, Romeo and Juliet and Tristan and Isolde, the love of the female pigeon for her blind mate saved the life of the male in strict violation of accepted concepts of pigeon life.

Fides, the male pigeon who was named after a pagan god because, unaccountably, he has become god-like to his mate, is white in color and easily distinguished when he is pointed out by his owner as the Abelard-Romeo-Tristan combination.

"About a year ago," Mr. Berry explains the romantic phenomenon, "I noticed that this bird was blind."

He steps into the cage, illustrating his point. The rest of the birds are agitated into flight. Fides, alone, remains unmoved.

"I was about to have him killed when I noticed this peculiar situation."

He steps out of the cage, permitting the birds to settle on their accustomed perches.

Mrs. Fides, he points out, is on a perch where food has been placed. Fides is on the ground and wants to get back. His neck cranes desperately for some sense of direction back to the perch with his mate. An anguished call, hardly discernible from the general whirr of the cooing birds, goes up to her. And she hears him. Her throat flutters with a cooing sound almost too faint to be noticed.

With nothing visible to guide him, Fides soars to the source of that sound. Truer than any instrument ever invented to aid blind flyers, the coo of the female leads her lover to food and safety.

"It's incredible," says their owner. "This thing happens several times a day in strict violation of the code of the nest—the survival of the fittest.

"A maimed bird is the prey of all its fellows, including its mate. According to principle, Fides should have become weakened through being unable to get to his food. Then the other birds, realizing that his affliction made him defenseless, should have started molesting him. That is why I was ready to kill the bird. But in this case, the female's devotion compensated for his blindness.

"Final proof of the success of this marital arrangement has just been made. Fides became a father. And he demonstrated his worthiness to his two fine sons by sitting on the eggs as well as if he had his sight."

FIDES AND HIS FAITHFUL MATE

They are perched side by side on the row of nest boxes second from the top. There they raised a family, Fides aiding by sitting on the nest

THE PIGEONS ENJOY A SUN BATH

Reading from left to right, we have Fides and the mate who has given him his eyes

An Odd Robin Home-Site

By R. NELSON

WHAT made Mrs. Robin choose a cemetery when considering a possible nesting place? Was it the word "Peace" inscribed on a nearby tombstone; or did she reason that here was one place that was free from mischievous boys that take such keen delight in wrecking birds' nests? Or was it the newly-painted vase used as a grave marker that caught her eye? A closer investigation showed that loving hands had planted many flowers there, now blooming in a profusion of color. There on the earth that gave them life, she constructed her nest and, when completed, laid in it three eggs of blue that seemed to harmonize perfectly with the whole general color scheme. Had panchromatic film been used in the making of the negative, no doubt a better color correction would have been rendered in the monochrome—but even corrected materials could hardly do justice to the delicate yellow of the pansies, the purple of the petunias, the red geraniums, and white oxalis contrasting with the green of the leaves, making a picture rather difficult to describe; a picture that should be seen to be appreciated. And it was in these colorful surroundings that the baby robins got their first glimpse of the outside world; a world of beauty and varied color.

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For Small Botanical Collections

By FRANK BENTLEY

THE USUAL elementary studies of botany, of course, generally include the gathering, preparation, and mounted notebook classification of such local specimens of leaf and plant varieties as may be gathered and put into this form of record by the student without too great an amount of equipment or study time. Pressing and drying them is, of course, usually done by placing the specimens between portions of blotting paper and then under an array of heavy books. This is somewhat clumsy, takes a great deal of trouble and is not altogether satisfactory. Make use of one or more ordinary amateur photographer's printing frames as shown. Lay an old negative (glass) or a piece of glass the size of the frame into it first, then a sheet of blotting paper on which are laid the specimens. Cover them with one or more perfectly dry blotters and put the spring back down in place. The springs nicely take the place of weights of any kind. The specimens are uniformly pressed and the affair is kept and handled in but very little space. All that is necessary is a small number of perfectly dry blotting sheets for occasional renewal in the frame.

Bingo Goes to the Doctor

BINGO is a French bulldog, and an important member of the family of Mrs. Edward Thomas of Frederick, Maryland. He shares the canine attentions of the family with a poodle.

It came to pass one day that Bingo had an ailing ear, so he was taken to Dr. R. V. Smith for treatment. After a week had passed the ear was entirely well. It was such a surprisingly successful and quick cure that Mrs. Thomas called the doctor and remarked that she was amazed that one treatment had done it.

"One treatment!" exclaimed the doctor. "Why Bingo has been here every day this week."

True enough, every day Bingo, accompanied by the poodle, had heaved a deep sigh and trotted down to the doctor's. Announcing himself by a scratch on the door, Bingo would enter the doctor's office and scramble up on a table for treatment. Cherishing painful memories of treatment some months back, the poodle remained in the waiting room until Bingo was ready to depart. After a week of treatment the ear was well again, so Bingo stopped going and began saving bones to pay the bill the first of the month.

Plant or Animal?

By L. CLAIRE HULBERT

ONE day recently while passing the Women's Building on the campus of Michigan State College, I was startled to see a large, dark colored animal attempting to scale the brick wall. It was of quite heroic proportions, reaching from the basement clear to the top of the second story windows, and was flattened against the wall in a vain attempt to climb higher.

Reason quickly told me that it was no animal, but only a Boston ivy, *Ampelopsis vetchii,* which had assumed the odd and suggestive shape through having been trimmed away from the windows and allowed to grow on the brickwork between.

The shape of the vine also resembles the pelt of a great bear with the feet left on, as though it had been nailed up to dry, fur side out. The toes and claws may be seen stretched out against the bricks.

One person to whom the photograph was shown remarked that the bear skin seemed to be head downward, while to the writer it appears to be head up in a climbing attitude.

Strange Birds of Different Lands

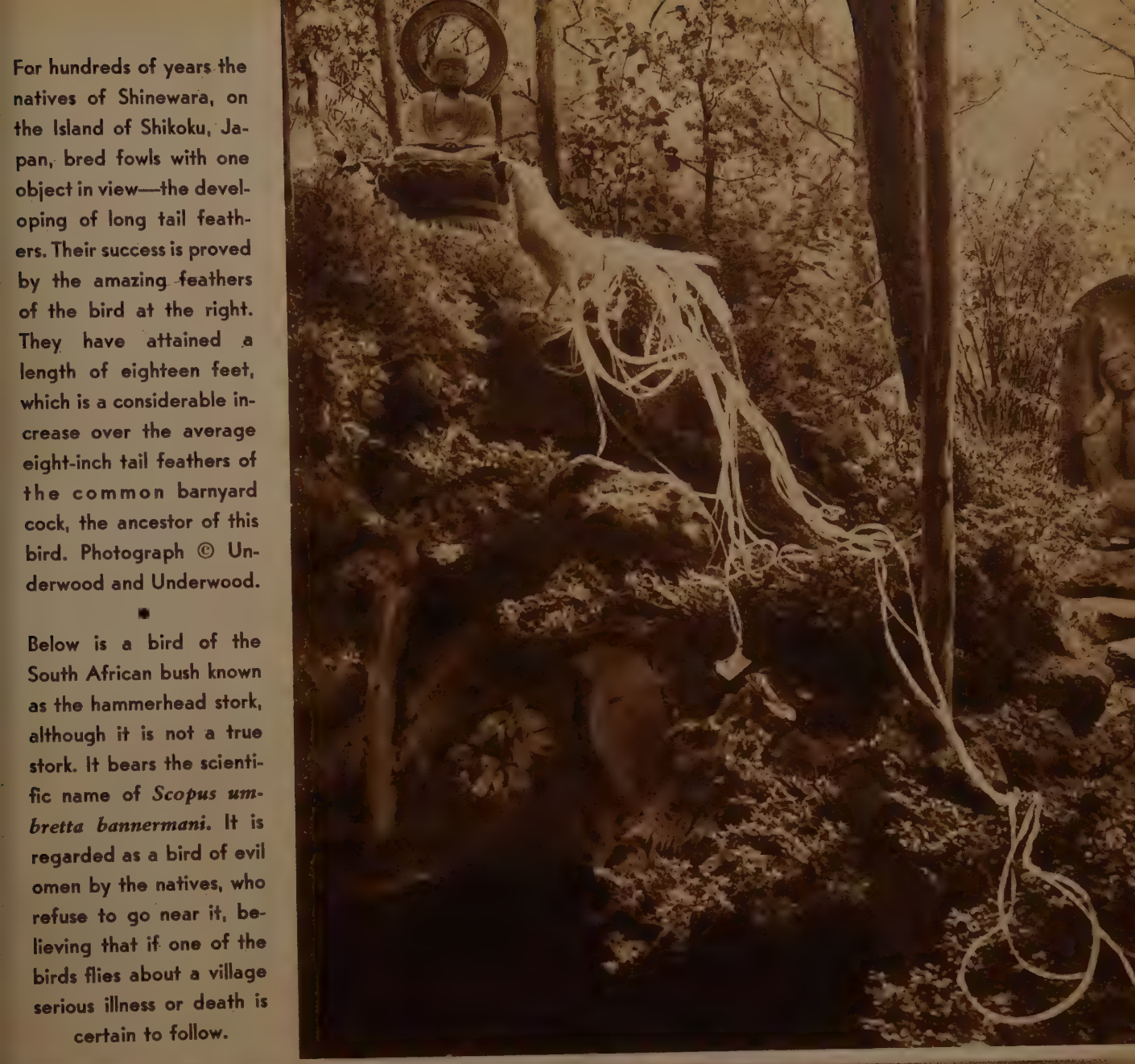
Among the odd and interesting birds the family of pheasants are outstanding. Above we have Lady Amherst Pheasant showing off. At the right is the beautiful and bizarre red-throated Loon of the northern hemisphere. The Loons are diving birds that breed inland on the shores of fresh-water lakes. Photograph by Keystone.

At the left is the odd-looking Stanley Crane of
South Africa, and, above, the Frog-mouth,
strange bird of Australia. It is one of the night-
jars or so-called goat suckers, all of which have
great mouths for capturing moths.

Above is the Lapwing, a familiar bird of northern Europe. It is a handsomely colored bird and its long, pointed crest, which can be raised or lowered at will, gives it added distinction.

At the left is the Apteryx of New Zealand, a flightless bird that has been hunted nearly to extinction. It is also known as the Kiwi because of its call note.

For hundreds of years the natives of Shinewara, on the Island of Shikoku, Japan, bred fowls with one object in view—the developing of long tail feathers. Their success is proved by the amazing feathers of the bird at the right. They have attained a length of eighteen feet, which is a considerable increase over the average eight-inch tail feathers of the common barnyard cock, the ancestor of this bird. Photograph © Underwood and Underwood.



Below is a bird of the South African bush known as the hammerhead stork, although it is not a true stork. It bears the scientific name of *Scopus umbretta bannermani*. It is regarded as a bird of evil omen by the natives, who refuse to go near it, believing that if one of the birds flies about a village serious illness or death is certain to follow.

When winter comes and many outdoor Nature activities must cease, many turn their attention to their home aquarium and their fishes, whether they be the shimmering, darting goldfish or some of the more delicate varieties of tropical fishes. Proper care of tropicals is a real task and one which requires both study and experiment. One is, however, amply repaid by the charm of watching the lives and actions of these vari-colored aquarium inhabitants. Photographs by Wardlaw M. Hammond.

In Dogdom

Let us, for a moment, leave the world of the wild and consider some of our faithful dog friends. Many and varied they are in breed and looks, but in all of them is that devotion that sets the dog apart from all other kinds of four-footed creatures.

We have the sled dogs of the North, hardy fellows, trained for endurance and for speed on the long pull. Their ancestry is not far removed from the wild, but they have learned to be servant and companion to man. Some of their number have heroic records of service in great emergency when snows blocked the way and travel could be made only by sled. Photograph courtesy of the Canadian Pacific.

Or we may have one of the bulldogs, noted for their courage and devotion to their owner and his family.

TOBY THROTTLEBOTTOM WAITS FOR THE MAIL

Spaniel owned by Russell T. Edwards, director of Educational Publicity of the American Nature Association, responds thus each morning to the letter carrier's whistle. Photograph by Thoman McEvoy.

Above we have a study in contrasts and, at the right, a group of English bulls with pedigrees of imposing length. We can't make out whether they are surprised at the impudence of the photographer in taking their pictures, or whether they resent such an intrusion upon their royal privacy. At any rate they are scowling at something. At the right is a noble and pedigreed wolfhound and below him just three lovable puppies eager to play. Finally, below, is one of the most valuable chows in the world, a dog whose collection of blue ribbons would make a graduating class of little girls pale into insignificance. This champion has just arrived from abroad.

"SAILOR BEWARE" or "THE SEA DOG"

A canine-marine study by Lynwood M. Chace

The typical palms of Florida that greet the eyes of the fortunate winter visitor. These palms line the Lake Trail at Palm Beach.

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Palms Here and There

When winter's blasts chill in northern climates some are able to seek the land of palms, where these graceful trees of the tropics wave in summer-like sunshine. Not all of us can follow the sun around but perhaps we can take a stroll by proxy among the palms of different lands where Nature has done many strange things with these trees of the tropic clime. To many of us it seems as if she had experimented more with the shapes and formations of the palms than with any other group of trees.

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At the right is the corojo palm found in the center of the Island of Cuba. Its own particular oddity is the peculiar thorny trunk which makes it no fun to climb and even less alluring to slide down. It is a relative of the bottle palm, and its leaves provide a useful fibre and its fruit is edible.

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At the left is an odd palm found at Fort Myers, Florida. Its straight trunk is covered with many long spines. It is known as *Acrocomia totai*.

Above is an unusual palm found at Colombo, Ceylo
It is one of a group with similar shape. It is a sort o
Brobdingnagian fan. At the left is a beautiful membe
of the palm family from India, a relative of the palm abov
and known as *Corypha umbraculifera*. Below is *Caryot*
urens, a palm from tropical Asia. It furnishes sap fro
which an inferior wine is made. These photographs b
International. Below, at the left, we jump to the jew
of the Pacific, Hawaii, where we find many palms ado
ing beauty to that land. Here are some date palm
lining one of the many lovely highways near Honolul
Photograph courtesy of the Los Angeles Steamship Co

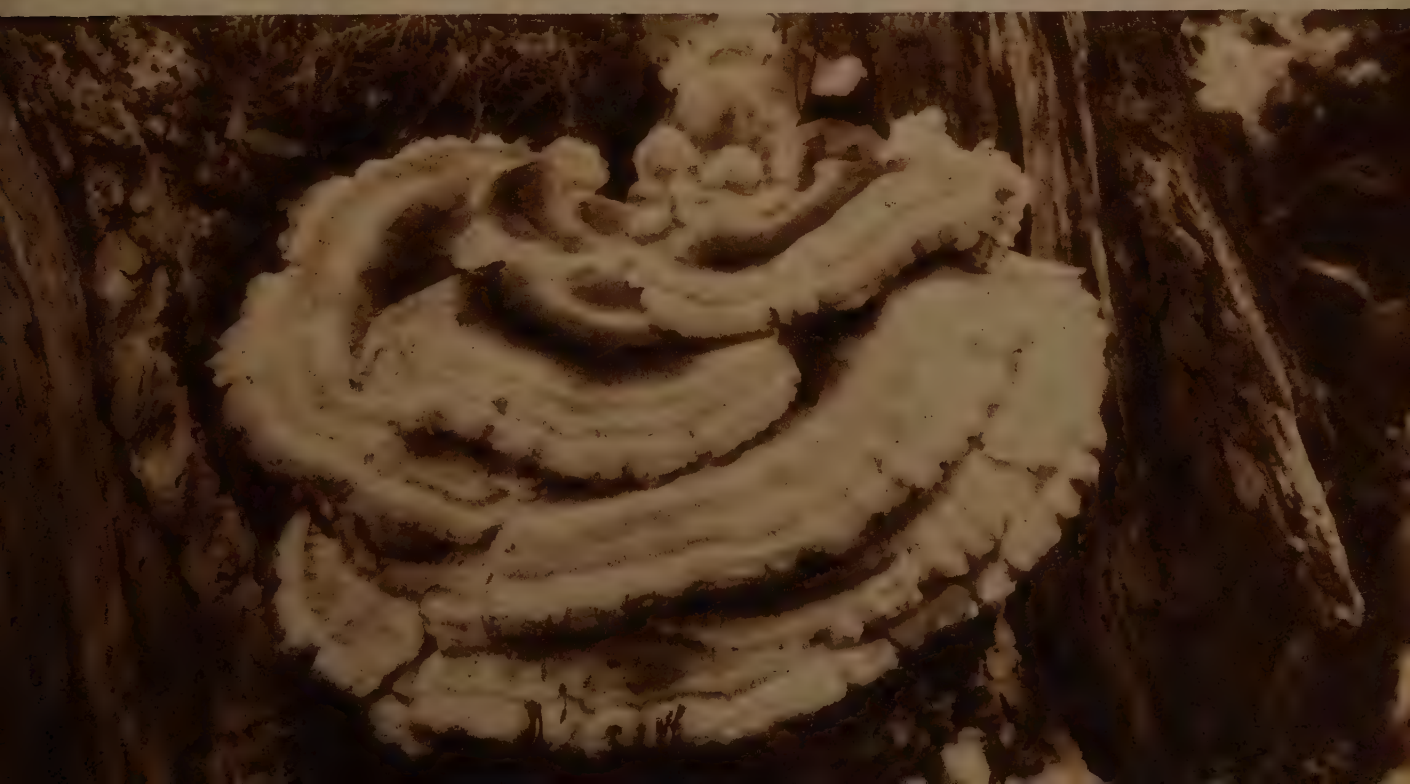
FRINGED GENTIANS OF THE INDIANA SAND DUNES

A flower study photographed by George T. Hillman

AN INTIMATE VIEW OF SOME DAFFODILS

An X-ray photograph by Lavilla Perry

The oyster mushroom, above, is a beautiful parasitic fungus pleasing both to the eye and the palate. It grows on dead trees, particularly favoring hickory trees, and often crop after crop may be harvested in a season. Thoroughly cooked before serving, it makes a delicious dish. Below is *Polyporus sulphureus,* a shelf or bracket fungus which likewise grows on trees, although not on dead trees. It is not edible. Photographs by John W. Weber.



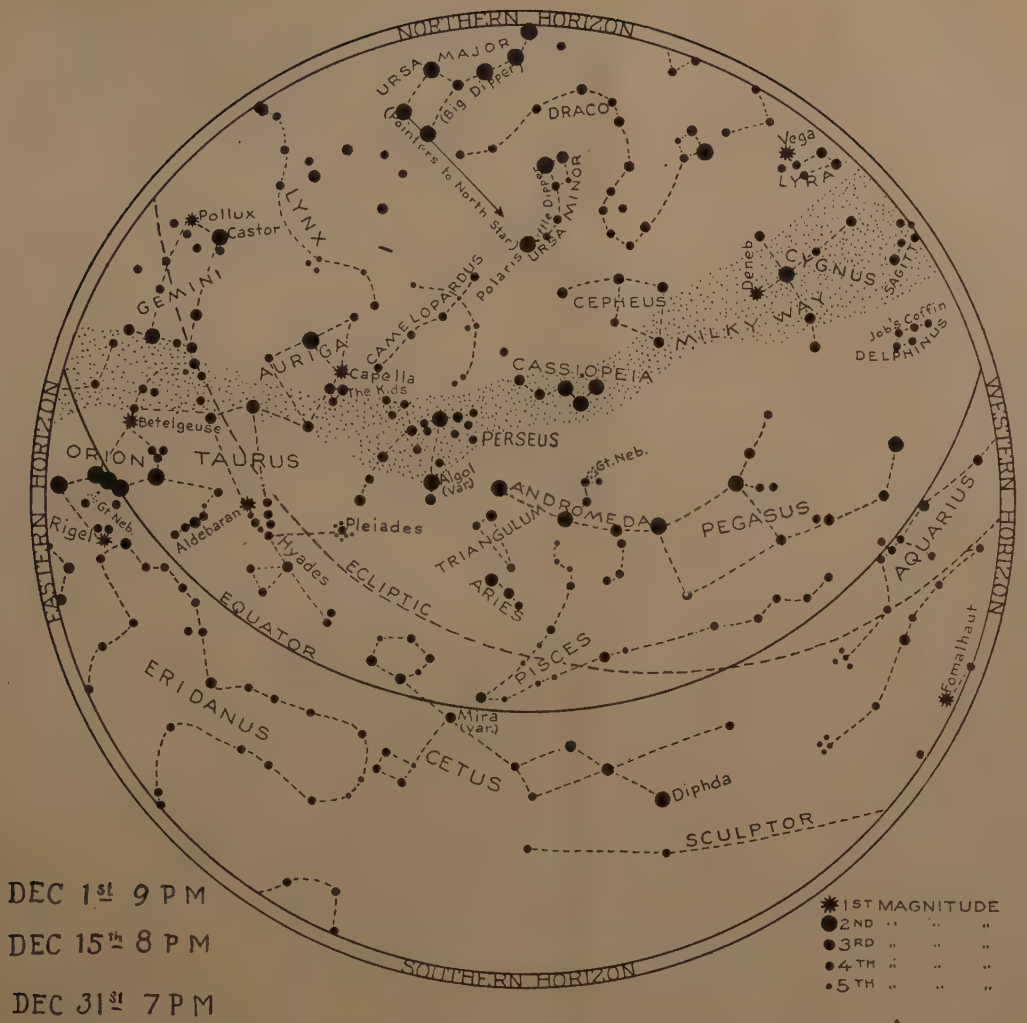
Coprinus micaceus, above, is one of the ink cap mushrooms, smaller than its other two close relatives. It grows on dead wood or dead roots just under the ground. If it is to be eaten—and it is tasty and tender covering a fragrant steak—it should be gathered the day it appears, else it will soon melt into a black, inky fluid. Below we have the bear's head mushroom, *Hydnum caput-ursi,* one of a group of mushrooms of distinctive formation. One of the common names for this group is "hedgehog mushrooms," because of the spines or teeth that bear the spores. Hydnum comes from a Greek word meaning edible fungus. Photographs by John W. Weber.

Yes, that is a reindeer at the left but that is not Santa Claus without his whiskers at the right. This reindeer is one of the large Alaskan herd maintained to supply reindeer meat and not to replace Dunder and Blitzen and the others when age creeps up on them and they are no longer agile at flitting through the air and making perfect landings on roofs and in yards. There is no record of any one of these reindeer being sold to Santa Claus, who is reputed to maintain a herd of his own and who would not think of using one of the antlered fellows for food purposes. Below we have a glimpse of a part of a large reindeer herd in Alaska. These animals graze on the tundra throughout the year, require no protection from the elements and thrive in our northern land. Reindeer meat, however, has not supplanted domestic meats in public favor. Photographs by International.

A self-satisfied old toad in the shade of a couple of toadstools carefully placed by the photographer—Lynwood M. Chace—so that he could get a good picture. He did. Mr. Toad is often an unappreciated gentleman. There are still some people who believe the old wives' tale that he is responsible for warts. He is not. In fact, if he turns up in your garden keep him there because he will earn his lodging by eating up injurious insects.

Below is a rhinoceros-horned chameleon. With all members of its numerous family it shares the ability to change its color. However, chameleons vary widely in structure from ordinary lizards and from each other, as you will gather from looking at this fellow and the little green chameleons inhumanely sold at circuses.

At the right is a tree chameleon common in south Europe and North Africa. Chameleons, for the most part, lay eggs, although some species bear living young. Most chameleons repel human advances at first but with patience they may be won over and become interesting, gentle pets.



To use this map hold it before you in a vertical position and turn it until the direction of the compass that you wish to face is at the bottom. Then below the center of the map, which is the point overhead, will be seen the constellations visible in that part of the heavens. It will not be necessary to turn the map if the direction faced is south

TAURUS, A CONSTELLATION

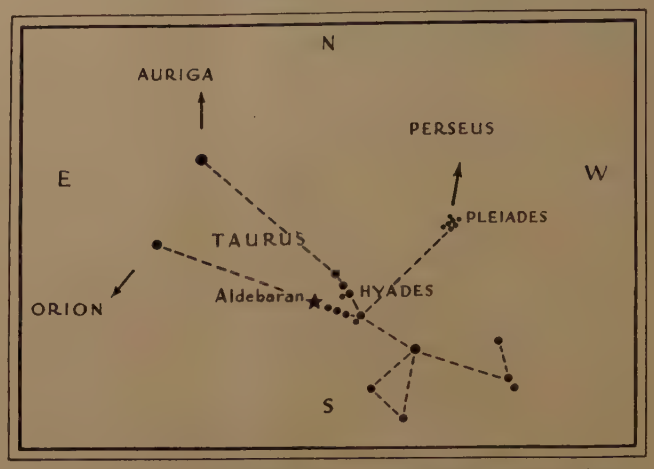
The Hyades and Pleiades now in the eastern evening sky

By ISABEL M. LEWIS

IN ONE of the most brilliant parts of the heavens we may now see the far-famed groups of the Hyades and Pleiades in the constellation of Taurus, The Bull. The tips of the horns of Taurus are marked by two bright stars that lie about mid-way between the brilliant Betelgeuse, in Orion, and Capella, in Auriga. Beta Tauri, the more northerly of the two stars, is a fine example of a white star and it forms a conspicuous pentagon with four of the brightest stars in Auriga. Both of these stars lie in the path of the Milky Way, which crosses Taurus in a northwesterly direction into Auriga and Perseus. The head of Taurus is outlined by the Hyades, the brightest stars in which are arranged in the shape of a V, while the Pleiades, arranged in the form of a small dipper, have been likened to a swarm of bees clustered upon his mane. Aldebaran, the ruddy first magnitude star in the Hyades, represents the fiery eye of the bull who is faced by Orion, brandishing a club in his uplifted right hand. This is outlined by a curved line of faint stars running from Betelgeuse to Zeta Tauri, the further south of the two stars that mark the tips of the horns of Taurus. A second curved line of faint stars extends from Bellatrix in Orion nearly to the Hyades and represents the upraised left arm of Orion, which mythological maps of the constellation show draped with a lion's skin.

The Hyades and Pleiades were, according to the ancient Greek legend, half-sisters, and daughters of the giant Atlas, who carried the world upon his shoulders. They have been celebrated in stories, legends and poems of all nations and among all tribes of men from remotest antiquity to the present time. No groups of stars in the heavens have appealed more to the popular fancy. The story of the lost Pleiad is so universal among widely separated races that it is suspected that at some time in

the distant past one of the Pleiades was more brilliant than it has been for some centuries. Six of the Pleiades are now easily visible in the shape of a small dipper, but exceptionally good eyes have made out as many as eleven or even fourteen stars without optical aid. Several hundred stars may be seen in this group with a small telescope. The brightest of the Pleiades is known by the name of Alcyone, and the names of the other brightest stars in the group are Maia, Merope, Taygeta, Celaeno, Asterope and Electra, the names of The Seven Sisters. Atlas, the father, and Pleione the mother are also in the group. Among the Hyades, a group that actually numbers about eighty members, there are six stars, including Aldebaran, that clearly define the V and several of these are double stars. Train your telescope on this group.



Taurus, The Bull, visible in the eastern evening skies in December, contains the two noted clusters, The Hyades and The Pleiades

Astronomers have discovered facts concerning these stars more impressive than the legends and myths that have come down to us from ancient times. Both the Hyades and Pleiades are moving clusters composed of many stars journeying onward through space in the same general direction and at the same speed. There are many such moving clusters in the heavens, but of all these the Hyades are the nearest. About eighty stars have been found to be members of this cluster and form a spherical group, with a diameter of about 30 light years, in the Milky Way and distant from our solar system about 130 light years. Although many stars not true members of the group are temporarily within its limits, the cluster keeps onward in its journey regardless of their presence. The Pleiades form an even more interesting cluster, distant from the earth about 325 light years, but with a diameter no greater than that of the Hyades. The cluster contains about 250 stars recognized as true members of the group and is more compact than the Hyades.

Photographs of the Pleiades taken with powerful telescopes have revealed the existence of nebulous regions in the cluster condensed around its brightest stars. The brightest portions are visible even to the eye when viewed telescopically and long exposures show nebulous streaks through the entire cluster. It is fairly certain that these nebulous clouds in the Pleiades consist of cosmic dust which reflects the light of the brilliant stars associated with them and thus become visible. Vast nebulous regions also exist in the neighboring constellation of Orion. In some instances the nebulosity surrounding these stars not only reflects their light but may be excited to luminosity by radiations from them. Apparently dark and lacking in radiant energy of their own they depend for their luminosity upon the stars in their midst.

Often the moon passes through the Pleiades and occults or temporarily hides some of the stars in the cluster. To show how greatly we overestimate the size of the moon it may be mentioned that when projected against the little dipper formed by the brightest stars in the Pleiades, it covers an area no greater than that of the bowl, outlined by four of the seven Pleiads. The Hyades also come frequently in line with the path of the moon and Aldebaran is one of the first magnitude stars that occasionally is occulted by the moon. Although the brightest star in the group, Aldebaran is not a true member of the Hyades cluster. It is less than half as far away and appears to be in the cluster merely because it happens to be in line with it.

This is one of the most interesting regions in the heavens to explore with a small telescope or field glasses. There are many double stars in the V of the Hyades and in the Pleiades, and hundreds of stars are brought into view with the slightest optical aid. When exploring this region do not fail to take a look at the Great Nebula in Orion, and the many double and multiple stars in this constellation. Also look at the splendors of Perseus, directly north of the Pleiades, which lies in one of the densest portions of the Milky Way. Watch out for the light changes in that remarkable variable star in Perseus known as Algol, or the Demon Star, which varies periodically in light in a cycle of 2 days, 20 hrs., 49 m.

Saturn is still a fine telescopic object. On December 15 it is close to the meridian in the southern sky at sunset in Capricornus. It appears as a bright yellow star of first magnitude shining with a steady light. Venus is now an evening star but too close to the sun all of the month to be visible. Mars rises shortly after midnight in Virgo and is in fine position for early morning observations. It appears as a reddish star of first magnitude. Jupiter will be a morning star all of this month in the constellation of Libra a considerable distance to the southeast of Mars. At sunrise the middle of the month it will be seen high in the southeastern sky. It is a deep yellow in color, not quite as bright as Sirius at this time, though when nearest the earth it is much brighter than this star. It always shines with a remarkably steady light, and is easy to locate in the skies.

Mercury is also in the morning sky all of the month until the last day when it passes to the evening sky. It is not in a favorable position for observation this month. On December 22, at 7:50 A. M., E. S. T., the sun will reach its greatest declination south of the equator and winter will then begin in the northern hemisphere.

NATURE RAMBLES WITH UNCLE DICK

A DEPARTMENT FOR THE YOUNG FOLKS

• • •

Fluffy and Tuffy Arrive

By CAMERON ROGERS

SURELY this is no place for a pair of bears. In fact, it is about the last place where we would expect to find a pair of spectacled bears from South America. They are called spectacled because they have white rings around their eyes like specs. They come from Ecuador, and were on their way to the zoo in New York.

But we have left our bears perched high on the smoke stack of the Grace Liner *Santa Maria.* On their way to New York they had been living in the ship's brig, which is what sailors call a prison. This brig is in the false funnel of the ship. But when they were coming up toward the dock in New York, their keeper brought them out to see the famous skyline. Right away they got their leashes tangled up in his legs. Then they spied the ladder of the forward funnel. Up they went like a pair of monkeys, perhaps to get a better look at the skyline. They seemed soon to be bored with this and began to play with the whistle cord. Quickly the ship's officers shut off the steam for fear the bears might blow the whistle and scare themselves right out into the harbor.

Finally Tuffy and Fluffy were gotten down and went ashore. On the way to the zoo they attracted crowds at every stop light. The pair, however, spent their time reaching through the wires of their cage and trying to claw the trousers and socks off their keepers.

Once at the zoo they were given a fine meal of sugar, corn, milk and rice. Then they went for several days in the hospital just to be sure they were well. After that they were introduced to two brown bears, known as Amos and Andy, from Tibet, and now share their cage with them, getting along nicely.

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Singing Mice

By ALLEN LATHAM

WHILE reading a book some years ago I came across the statement that under certain conditions the common house mouse would sing. I confess that I was somewhat sceptical, and felt that in this case seeing, rather hearing, would be believing.

Several years later, while reading alone one winter evening, there came to my ears the sound of a canary singing. Stopping my reading I listened carefully. The sound came apparently from the cellar beneath my feet. Trills, quavering notes, and soft flutey sounds were surely coming from the cellar. It could not possibly be a canary for we had none and the nearest house was two hundred feet away. Cured at once of my scepticism I hastened down cellar hoping to see as well as hear, but the little singer had stopped and was not to be seen.

Two or three evenings later, while in the same room with my older daughter, the rest of the family being absent, I heard the singing once more.

This time I acted with great caution. Carrying a lamp and keeping the light shaded with my hand I crept gently down the cellar stairs. The singing did not cease. I went slowly toward the sound and soon caught sight of the sweet singer. There sitting upright on the stone wall was a small mouse, and from that mouse were coming unbelievable sounds. Though much resembling the song of a canary the song of the mouse was not so sprightly, and it was full of a sad cadence. In sweetness and purity of tone it fully equalled the best of canary singing, but lacked the finish of the well-taught canary.

Never since have I heard a mouse sing, and it goes without much argument that singing mice must be very rare, and the conditions which bring about the singing unknown. Was this mouse a rejected suitor? Was he hungry and cold? Or was he simply singing from sheer pleasure? Whatever the cause, it was a very interesting experience.

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Coyote Scatters the Stars

A Cochiti Pueblo Indian Myth

Retold by DOROTHY E. PLETCHER

LONG, long ago, when people began to come up from the underworld, they held a meeting. One of the men was chosen to place the stars in the sky. Of course, Coyote and all the four-legged animals in the world were at the meeting. The birds were there, too.

Now there was a strange-looking jar in one corner of the room. "You are not to open that jar in the corner," Coyote was told. "You must be careful not to take off the cover."

In the meantime the man who was to put the stars out had hung up the Seven Stars (the Dipper). He also hung up the Three Stars which are called the Pot-rest Stars. They are the sign that the Indians are to use three stones to support a pot for cooking. Then he put up the beautiful big Morning Star.

But alas! Coyote was a very curious fellow. Said he to himself, "What harm could there be in having just a tiny peek in the jar? No one will know a thing about it. I'll go to the jar and see what is in it."

So he uncovered the jar, and what do you think happened? Pouf! Out came all of the stars from the jar and scattered all over the sky. And that is why, today, the stars are sprinkled everywhere in the sky.

It was in this way that Coyote got his bad luck. "Coyote, you have done harm," he was told. "For punishment you shall get into mischief everywhere you are. Some days you will go hungry. Some days, perhaps, you will get good things to eat. Some day you will kill yourself."

Then the doors of the underworld were opened for all the animals to come out. They spread all over the world. And so, forever afterward, there have been animals everywhere over the earth, and the coyote is always getting into mischief.

•

Did you ever hear of a mouse deer or a tree kangaroo? What do you know about the different wild cats in the world? What are some of the interesting things found only on the desert? How does the sea-horse swim and does the flying fish really fly? The answers to all of these questions will be found next month in the picture section of Nature Magazine. If you have any suggestions about the kind of pictures you would like to see in that section just write to Uncle Dick.

The Telescope

By JEAN H. BROWN

My father has a telescope,
That helps me see the stars,
And when the night is clear, I hope
I'll see the planet Mars.

There's Jupiter with satellites,
And Saturn with his rings,
But what must be the best of sights,
Is Mercury with wings.

The Same Old Turtle

By BEN EAST

BACK in 1916 Herbert Nichols and his brother Cyril, young farmers living near Lamont in western Michigan, found a snapping turtle in a field where they were working.

They caught the turtle, carved their initials and the year in its shell with a pocket knife, not cutting deeply enough to injure it, and set it free.

Early this summer (1934) Herbert found a turtle in the same field. When he picked it up, to his amazement its shell still bore the plain imprint of the initials and date he and his brother had carved there before we entered the World War.

The turtle had grown only an inch or two in the eighteen years. Nichols kept it in his rainbarrel for a few weeks and then released it again. He says it is his hope to find it once more, sometime within the next thirty years, and again record its growth and wanderings.

The editor, being familiar with the snapping turtle disposition, wonders how Cyril managed to carve his initials, if he made the letters right side up and had to face the turtle, without becoming permanently attached to him.

Last month in the puzzle verse, "The Spider's Bungalow", the author gave Mr. Spider the credit for spinning the web. We are very sorry that we allowed this to get into print. Mr. Spider is the unimportant member of the spider family. It is Mrs. Spider who spins the web and she does not welcome Mr. Spider around the place. In fact, she is most likely to eat him up if he gets too friendly. While some male spiders can spin webs, they do not often do so, but leave that to the lady of the house.

Hiking and Camping Forum

Conducted by
Ernest A. Dench

Brevities

A woman camper is deservedly famous for her unique dinners—at home. The elaborate culinary experiments are relished by her camping friends. When out in the open, she rigidly adheres to tried and proven dishes. A wise woman. . . . A Southern CCC worker, living for years within 100 feet of the Appalachian Trail, first heard of the Maine to Georgia footpath while reading September NATURE MAGAZINE in the camp library. . . . The Souvenir Mystery Walk—20 long tough miles through The Dunes—was recently offered by the Prairie Club. An appropriately inscribed gold pin was every survivor's reward. . . . Where and how to obtain tranquillity, *vide* a Western club's announcement: "In her quiet way Miss —— will lead us along the quiet Clackamas to a quiet and peaceful lunch." Let's hope the birds curbed their musical inclinations! . . . A first-aid dressing for minor injuries is "dated" to ensure freshness. It also has air circulation holes, to speed the wound's healing. . . . A new edition of the Green Mountain Club's guidebook is announced for early 1935 publication. . . . Two men and one woman constitute the Sick Visitation Committee of the Wisconsin Go-Hiking Club. . . . Trail working instructions by a Southern club: "Do not place markers on telephone poles. If you find any, remove them." Maybe the telephone company will have something to say about that! . . . Under the auspices of the Blue Mountain Club of Pennsylvania, George A. Richardson is giving a series of Appalachian Trail lectures, illustrated with colored lantern slides and movies. Mr. Richardson's services are available to groups on a non-commercial basis. His address is 1102 Linden St., Bethlehem, Pa. . . . Out of the West comes a cloth knapsack resembling an oblong box. Maker claims weight of knapsack's contents is equally distributed over the back. . . . A woman hiker collects one stone from every mountain she climbs. What a novel rock garden her collection would make. . . . Potomac A-T Club has discovered a simple way to mount pocket maps on cloth. A certain branded cloth used by photographers is recommended. . . . "We Won't Go Cozy" is the slogan of the Southern Pathfinders, England. Our "foreign" language expert defines "cozy" as "soft." . . . Sound reasoning advanced by the Natural Bridge (Va.) A-T Club to get more members on scheduled trips: "One of the best ways to keep the Appalachian Trail in good condition is to use it." So say we. . . . Exceptionally resourceful is the Eastern operator of an outdoor footwear rebuilding service. A single pair of boots can be transformed to meet seasonal climatic conditions.

EXTERIOR OF A LONDON AND NORTHEASTERN RAILWAY CAMPING COACH ADAPTED BY THE RAILROAD TO THE PURPOSES OF THE CAMPER

Railroad Coach Camp

Three of the principal British railroad groups offered unique camping vacations this past summer. Coaches recently retired from active service were remodeled for camping purposes, with separate compartments for sleeping, living quarters and kitchen. Complete kit was carried. The party had, of course, to buy its own food supplies, and kerosene for heating and lighting.

These camping coaches were stationary, located at picturesque country sidings along branch lines. Each coach had comfortable accommodations for six occupants. The party traveled by ordinary train at the regular fare to the chosen rendezvous. Tenants traveling by any other means were not accepted. The weekly rental fee for a party of six was the equivalent of $12.50, so each camper's share was very modest.

The French State Railways organized a series of weekly camping tours through rural France. A party of ten was the minimum, housed in a special, white painted coach attached to a through train. The party got off at a certain station, and rejoined the coach further down the line. In the interim they enjoyed a rustic hike of from six to twelve kilometers.

The coach remained overnight at a siding. The party had the option of putting up hammocks inside the coach, erecting tents outside, or obtaining lodging at a local inn. The railroad sponsors did not provide camping equipment or cooking facilities. The coach hire fee was fifteen francs per day, in addition to the regular mileage tariff per passenger.

It is to be hoped that our railroads, with branch lines either abandoned or passenger traffic reduced to a skeleton, will cater to campers next season. Congested highways and the strain of driving will send many campers back to the rails, provided flexible and inexpensive accommodations are offered.

Maintain Your Schedule

Any outdoor organization learns, in time, to take the rough weather with the smooth.

"A trip is subject to cancellation if weather is unfavorable," announces a relatively new club. Just what is unfavorable weather? Few hikers and campers will agree; some like it warm, some like it cold, while others prefer the fresh smells and colorings of a storm's aftermath.

The Maryland Appalachian Trail Club, equally new, states that—"Bus will leave rain or shine." That's the commendable "show must go on" spirit.

Most of the older groups are rightly proud of their unbroken records of long standing. What club can surpass the brilliant achievement of the Spokane Mountaineers, with 800 hikes scheduled and 800 hikes undertaken?

Once a club begins to evade trips because of an overcast sky, or maybe a shower, it has, in part, a paper schedule. The hardy few have vacated their comfortable beds, dressed, breakfasted and journeyed downtown, hoping that the trip would mature. Disappointment is keen when the leader calls off the hike. An uncertain schedule will, in time, destroy a club's morale.

Concessions to climatic conditions can be made *after* the hike is under way. For instance, the purposely prolonged luncheon in an abandoned barn or hut. The hole in the roof temporarily "plugged" with a ground sheet. The fun of gathering the nearest approach to dry fuel in wet pasture or forest. The triumph of creating a blazing fire. The comradery of a small circle.

Yes, modify the hike but do not cancel it. The weatherproof minority is deserving of consideration, as such members ensure no lapses in the club's schedule.

Home-Made Gadgets

S. Hadsell of Phoenix, Arizona, has discovered a method to avoid campers stumbling over tent pegs in the dark. Affix a white tin bottle cap over the top of each peg. It will reflect the light.

Dave Gustafson, of the Minnehikers, is proud of his midget first-aid kit. It packs into a typewriter ribbon tin, carried in his shirt pocket. Contents are as follows: Iodine packed in a tiny perfume vial; 4 aspirin tablets in a small rouge box; 18 inches of 1-inch adhesive tape; 36 inches of 1½-inch sterilized gauze; 2 compresses. Use medicated cotton for padding the tin.

An experienced camper tells how the beginner can eliminate superfluous duffle. The day before departure, make two piles—one of essentials; the other of things that might be needed. Take both, but before packing up on last day in camp, sort out the articles which were not used. There is no better teacher than experience, he declares, but he warns against postponing the second sifting process until the next trip, when memory may be dim and previous mistakes repeated.

Setback to A-T

Excessive hewing of highways through the wilderness has shattered the morale of some of the Appalachian Trail maintenance groups.

We admire Myron H. Avery's firm stand on the trail's preservation in his recent message to club groups. How can Mr. Avery and other A-T executives favorably present our case to government officials under such conditions? The aforesaid official will reply that the affected sections of the A-T are already abandoned.

Mr. Avery has a hard task—one that many would shirk, for the plans he submits will involve plenty of compromises and modifications. He will be lucky to come away with a few slices of bread instead of the proverbial half of loaf.

This is no time to permit Benton MacKaye's magnificent pioneer work to go to nought, and we hope the guilty clubs will soon oil and sharpen up their trail tools.

Cincinnati Walking Records

The Cincinnati chapter of the American Walkers Association promotes regular, systematic walking. A full-day's hike is rarely less than 15 miles, and sometimes amounts to 24 miles. Even a half-day tramp entails from 5 to 12 miles.

No trip, as far as we can judge from the official descriptions, calls for hills or rough cross-country going. The disturbing word, "pike," is frequently mentioned. We trust the automobile traffic out Cincinnati way Sundays is not the nerve-wracking experience it is to the Eastern hiker.

Last year President Arthur E. Afsprung headed the "300 Mile Club," the inner circle of very active members. Afsprung did 724 miles on 68 hikes. Equally commendable is that, out of 140 members, 47 qualified for admittance to the "300 Mile Club."

Two British Books

Patrick Monkhouse gives us, in *On Foot in North Wales,* the low-down on walking conditions there. A Lancashire man, Monkhouse has a pungent, rousing style. He refers, for instance, to a "snub-nosed ridge" and a "womanly mountain." Monkhouse has little use for Snowdon, which, like our Mount Washington, is ruined by a railway and a hotel. Luckily, one of Snowdon's two summits is still undefiled by man. The book is an admirable compromise between a guidebook and a personal narrative. The London publishers, Alexander Maclehose and Company, offer the book at five shillings, about $1.25.

Who would credit sheep with intelligence? Patrick Monkhouse accords the animal a high rating, as does H. H. Symonds in his book, *Walking in the Lake District.* Here's the proof: "Sheep always curve around the *foot* of the hummocks . . . leave tracks there beyond price and praising; in feats of civil engineering sheep . . . hold first place . . . the best man-trodden path through heather will be only two boots wide. A sheep track has one boot's width."

On the whole, the volume is "strictly business"—a practical guide to England's major mountaineering district. The photographs may tempt the reader to cross the ocean.

Monkhouse and Symonds, like most climbers, are intolerant of the popular resorts abounding in the valleys. The reader is taken, by proxy, to the unfrequented uplands. The Symonds book is published by the Macmillan Company at $2.00.

Coloring the Trails

Mount Tamalpais trails lead either to near the sea or the sky. The seven Pacific ocean-bound trails are distinguished by painted dots. Painted dashes indicate the eight trails with skyline tendencies. Two trails running together for a short distance form a dot and dash hybrid. Colors not often encountered on trails, but used here, are aluminum and green. The visibility favorites, yellow, orange, red and blue, are in evidence, although white is missing. Maybe the terrain peculiarities make green more effective than white. Dr. Kaspar Pischel devised this new color system for the Tamalpais Conservation Club, San Francisco.

Adirondack Guide Book

The committee responsible for the first *Guide to Adirondack Trails* frankly admit it lacks the encyclopediac scope they intended it to have. These shortcomings will undoubtedly be remedied in future editions. Considered as a source of information to the Northeastern section, where the higher peaks abound, the book is accurate and up to date.

Brief chapters on camping (two, with a separate one for winter), canoe routes, ski trails and Adirondack literature are included. One particularly good piece of advice applicable to severely cold weather is how to avoid frozen sandwiches for lunch. Carry them in the *back* of the pack wrapped inside a warm garment. Body heat will do the rest.

A map, with symbols to denote trail colors, is bound to the pocket-size volume. The stout cover, the paper used for the "innards," and the tough binding should enable the book to withstand plenty of abuse on the trail. Orders are filled at 75 cents per copy by the Adirondack Mountain Club, Capitol Station, Albany, N. Y.

Mountain "Goats"

George Hipkoe edits a newsy and attractive monthly paper for the Mount Baker Club, Bellingham, Wash. The two-color frontispiece depicts two mountain goats holding the club shield against a snow-capped peak. "Boxed" at the bottom of the same page is a "He's Got Your Goat!" caption, followed by a reminder to new members to procure the club emblem. Included with the October issue is a four-page illustrated supplement. Here Hipkoe demonstrates his skill at fiction in relating two versions of an Indian legend connected with Mount Baker. The literary supplement is to be a monthly feature of the *Rambler.*

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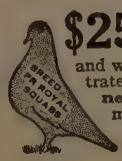

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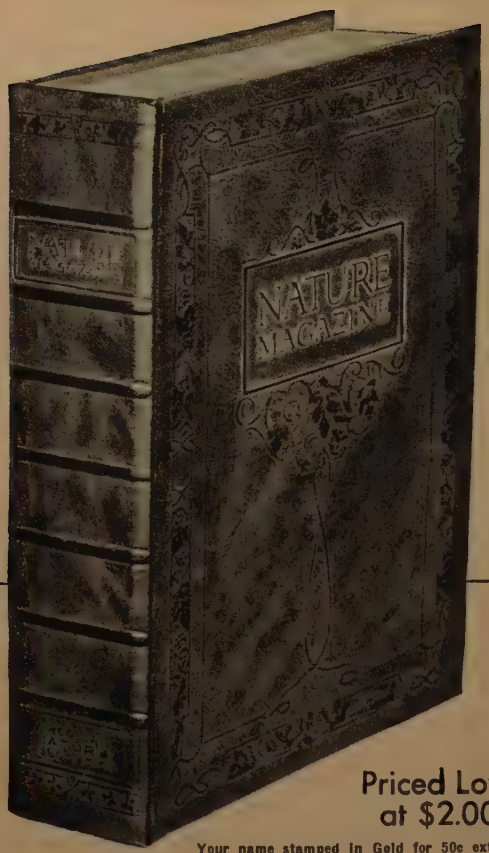

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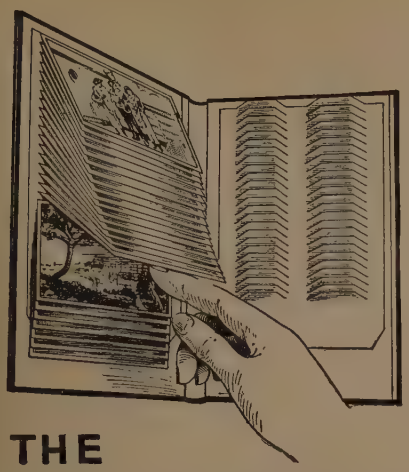

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Cats and Birds

Editor,
NATURE MAGAZINE:

I presume the cat vs. bird discussion is closed, yet I cannot resist adding my ten cents' worth to it, especially since reading the letter of E. B. T. in the October issue. Despite the quick defense it contains, the fact remains that cats are killers and birds are their prey.

I have always owned cats and they have invariably displayed above-the-average intelligence—of course. They have always been well fed, well brushed and as thoroughly spoiled as the proverbial only child. But their numerous virtues have never blinded me to their several faults, and many a spanking has been administered to a stalking culprit. How many bird casualties have actually occurred I have no means of knowing as I have not cat-walked with them each moment of their freedom.

Evidently the owners mentioned by E. B. T. do nothing else when their pets are at large; otherwise how do they *know* that their cats do not climb trees or that they do not pounce on helpless birdlings just out of the nest? Fortunate people to have so much leisure for roaming with their pets. I have taken more than one saucy feline from our trees (and probably my neighbors have done the same with mine) and I've discouraged many another explorer with a well aimed little dipper of water. It would be strange, would it not, if those model pets of E. B. T.'s friends had happened to be among those present? The idea makes an interesting plaything—almost as interesting as the little coon-angora cat my brother once owned, who adored being harnessed to a small and specially constructed cart, and with plumed tail erect and purr turned on full strength, would follow his master anywhere, sure of her reward of a bit of cheese or a juicy olive, both favorites with her.

But she climbed trees! And she stalked birds! Yet we sincerely and earnestly, in every way we knew, attempted to safeguard the birds that occupied our huge maples and other trees.

With all respect to E. B. T. and friends, I bespeak more power to constructive writers such as Miss Garner and to your editorial policies which, at least to one reader, seem decidedly to belong in the 20th Century.

G. M. S.

Editor,
NATURE MAGAZINE:

After reading Mildred Garner's article, "They're Getting Our Birds!", as well as the letters it elicited, I am moved to "put in my oar" also. I offer no defense of stray cats, a disagreeable and dangerous nuisance to humans and birds alike, but I do believe the damage they do to bird life is apt to be exaggerated (unconsciously perhaps), equally by bird-lovers and cat-haters. For my own part, I have always enjoyed a decided, if conflicting, fondness for both birds and cats.

By day I have watched many cats spend many patient hours stalking small birds, always without success. Twice at night I have seen a bird caught by a cat against a lighted window near a tree or arbor, and toward which the victim must have fled in

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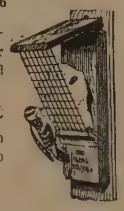

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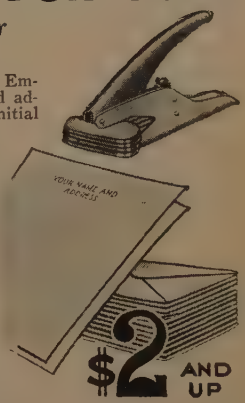

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Sunny Caribbean Ports

(Courtesy American Express)

A Bit of Old Holland in Caribbean Waters—Curaçao

FOR travel in the tropics during the winter season of 1934 and 1935, the steamship companies offer a large number of cruises varied as to itinerary, duration and price.

These cruises are so timely scheduled that they leave port just when wintry blasts, steel-gray skies and apothecary bills depress the tempo of the northern scene, while in the tropical south people are laughing and playing on palm-lined shores.

There you will find bits of Europe etched against a background which still has its roots in the inscrutable mysteries of Africa . . . cities of the old Spanish main which were once the hunting grounds of pirate chiefs and sabre-clad conquistadores, while today they are delightful little odd corners of the Caribbean crowded with sights of circus unreality.

St. George's, Grenada and Trinidad offer a mêlée of local color and English trimness. . . . Caracas, with its seaport, La Guaira, is a city with a Spanish past. . . . Curaçao is a pastel-colored canvas of a tiny Dutch outpost spotlighted by the sunshine of the Tropics. . . . Port-au-Prince, Haiti, mingles tropic lavishness with the spirit of the ancient voodoo. . . . Nassau, with its turquoise waters, marvelous bathing beaches and golden sunshine, is tropical in a civilized way. . . . Cartagena, Colombia, harks back to the warrior days of Philip of Spain. . . . Colon is a port of startling contrasts on the Atlantic side of the world's mightiest waterway. . . . Bermuda is a paradise of enchanting white houses, palms, and gorgeous beaches.

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vain search for shelter. That birds are caught is evidenced by the pitiful little patches of feathers which may be found from time to time on city lawns or in the woods. To give the devil his due, I never knew of a cat which, as Miss Garner charges, ate "a few bites of the tender breast" only. When a cat catches a bird, or anything else, he eats it with surprising thoroughness, unless he is disturbed before he is finished.

Miss Garner burned with indignation to see a cat seize one of her redbirds. I know precisely how she felt and have felt the same way myself. Yet one is stirred to equal or greater indignation when driving along one of the busiest and best residential streets of Corpus Christi to see several hulking boys of seventeen or eighteen with airguns, ducking about under a palm tree, shooting at intervals, until the little feathered body of their victim tumbles to the sidewalk. Yet that is an all too common sight. Big boys and little boys, air rifle, and even occasionally .22 rifle, in hand, hunt through the streets, vacant lots and outskirts of town, where birds are already handicapped by lack of native trees to shelter them. Last year a boy living not far from me hunted regularly, bringing in birds to feed to the swarming and ever-increasing horde of cats which resided at his home. Such things are maddening, but in the face of an utterly apathetic parental and public opinion, one "sentimentalist" can do nothing. There are laws, and all that sort of thing, but one can't afford to be at war with one's neighbors all the time.

"English sparrow shooting" is often the excuse offered. One youngster, from San Antonio, I heard boasting of his exploits with his "beebee gun." Knowing his father, I expressed surprise.

"Oh," said the youngster, "Daddy told me I mustn't shoot anything but sparrows with it.

"You know," he went on brightly, "I've shot some of the funniest sparrows. One was all red. The other day I shot a sparrow that was yellow with black on its wings and tail—"

It may be that the parents rather than the children are in need of some publicity. But though all the cats in America be eliminated, the boy and the air rifle will put an end to our song birds for us if they are let alone.

D. R. L.

Beauty in the Open

Editor,
NATURE MAGAZINE:

I have been working on the Yakima Indian Reservation in eastern Washington for the past two months, and some very interesting and disheartening information has come to my attention regarding wild life and its treatment on the reservation.

In this region, part of the last frontier, and one of the wildest sections of the United States still untainted by the white man, I am astounded at the way in which wild life, both large and small, is being persecuted.

First of all there is absolutely no regard for state open and closed seasons on game. Blacktail deer, a rapidly disappearing species, are shot regardless of age, sex or season, by resident Indians and white employees of

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ATLANTIC CITY

the Indian Service. Brown bear are harried the year round by sheep herders and enterprising sportsmen alike. Many are killed, too, in a season. Elk, although only a few are left, are also hunted in and out of season. Mountain sheep—there is still a small band up near the top of the Cascades—are protected year round by law. They were almost exterminated a few years ago; then they were protected.

Game birds are exactly in the same boat. They receive the same relentless year round persecution. Open and closed seasons mean nothing, even where migratory wildfowl are concerned. This is where the shoe begins to pinch, because these migratory birds are mine as well as the noble redskins'. Secondly, song and insectivorous birds, together with hawks and owls, are shot by any fool with a gun—and there sure are plenty of guns. Even the rare sandhill crane is shot because it eats a few fish occasionally. The state protected it until recently the fisherman had protection removed and now it will be exterminated.

Anything that moves is a target for some individual out for practice with his new pop gun. And the irony of it, the Migratory Bird Treaty with Canada is supposed to be upheld on Indian Reservations!

Are we to watch this lovely wild, virgin country become a desolate and uninteresting wasteland; devoid of any of the larger forms of wild life, where even the tiny chipmunk and gopher are rare, just because some selfish men want target practice in their idle moments and others like to murder uselessly under the name of sport?

The natives of Washington brag of their lovely and attractive country—and it is lovely, but why? Because it is still wild and civilization has not yet had a chance to crowd out all the native fauna. It is being crowded out rapidly now and why is there no movement on foot to stop the regretful destruction? The ones that follow after us will want to know.

TRUMAN PEEBLES.

Birds in Color

Another book of bird illustrations has just come to hand, entitled *Bird Portraits in Color*. This set of plates was prepared to accompany the text on the *Birds of Minnesota*, by Dr. T. S. Roberts, the original issue of which was exhausted some time ago with no immediate prospect of another edition. In view of the steady and increased demand for the pictures it was decided to bring them out in a much less bulky form with brief, concise descriptions instead of the exhaustive treatment followed in the first volumes. Dr. Roberts is one of our foremost ornithologists with long teaching experience so that the text, which contains much new material, is authentic and reliable.

There are 92 full color plates with 561 figures representing the birds of the middle United States, in seasonal, sexual and immature plumages, making this book one of the most recent, outstanding volumes for use by teachers and young people interested in the entrancing study of birds; also a most excellent gift book at all times. The reproductions are made by the lithographic offset process in 6 or 7 colors, soft and beautiful as one could wish. Six bird artists are represented and with the exception of one plate, an early picture by Louis Agassiz Fuertes, show the latest work of these men.

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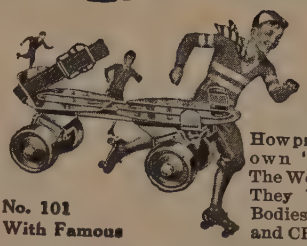

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More Ortho-scope Books

Four little booklets designed for the use of the younger members of the family have been brought out by the Orthovis Company of Chicago, making use of the third dimensional properties of the red and blue ortho-scope. Here, again, the habitat groups of the Field Museum in Chicago have been used as the pictorial source. Scenes from these groups are reproduced in the booklets with the peculiar blurred effect that makes them odd to look at until the ortho-scope is trained on them. Then depth is found and the subjects stand out prominently. The first four booklets are *The Lion, The Bear, The Deer* and *Wild Sheep and Goats*. They are attractively printed and simple and excellent text is provided to accompany the pictures, thus making them of real value educationally as well as interesting as a novelty. The booklets sell for 25 cents each or the four for one dollar.

Useful Wild Plants

A compendium of practical, useful information about herbs and plants that any layman can apply to his or her needs is the newly issued volume entitled *Useful Wild Plants of the United States and Canada,* by Charles Francis Saunders, and published at $3.00 by McBride. Illustrated with numerous photographic half-tones by the author and with drawings by Lucy Hamilton Aring, it includes treatment of such topics as wild plants with edible tubers, bulbs or roots; wild seeds of food value and their utilization; the acorn as a human food, and some other wild nuts; some little regarded wild fruits and berries; wild plants with edible stems and leaves; beverage plants of field and wood; vegetable substances for soap; some medicinal wild plants worth knowing; miscellaneous uses of wild plants; and a cautionary chapter on certain poisonous plants. Included also are regional and general indices. It is a useful and extremely interesting book from every angle, and now in its new and completely revised edition it has an especially honored place on the shelves of botanists and plant lovers.

Arboretum Booklet

There has just come to hand a copy of *Through the Arnold Arboretum,* an attractive booklet that, as the title indicates, covers the botanical wealth to be found in that institution. We do not know just when this was published or what it costs but it is of distinct horticultural interest and available from the Arnold Arboretum, Jamaica Plains, Massachusetts.

Poetry and Mathematics

Perhaps had we had this little book back in the days when we were struggling vainly with mathematics we might have succeeded in rising above our natural antipathy toward this item on the curriculum. We refer to *The Poetry of Mathematics,* the title given to a group of essays by Professor David Eugene Smith, Professor Emeritus of Mathematics at Teachers College, Columbia University. It is published by Scripta Mathematica, Yeshiva College, New York City.

NATURE IN PRINT

As a convenience to readers the books reviewed in this department of Nature Magazine may be ordered through the book department of the American Nature Association.

Child's Astronomy

The market is not oversupplied with good books on astronomy for youngsters and, therefore, *The Stars for Children* by Gaylord Johnson should receive a hearty welcome. While this volume is presented for children from the age of six to fourteen, we suspect that it will have a wider appeal and be equally fascinating to parents whose interest in astronomy had been nil until Joan or Jack came home from school with questions about this star or that constellation. This will be an extremely handy book to have around when these queries start. It is published by the Macmillan Company and sells for $1.50.

Poetry of the Garden

No garden lover can fail to be delighted with the charming poems of the garden and its inhabitants by Joshua Freeman Crowell brought together in the volume entitled *Garden Wise and Otherwise.* The author writes both as a poet and as an accomplished horticulturist. Some of his verses deal with myths and legends entwined about some of our garden plants; others deal with botanical facts. We have already checked off the names of three garden loving friends on our Christmas list for now we know what to send them. The volume is published by Bruce Humphries and sells for two dollars.

For All Fishermen

An essential volume for the library of any fisherman is *American Food and Game Fishes,* by David Starr Jordan and Barton Warren Evermann, which has just been brought out in a new edition by Doubleday, Doran and Company. This edition contains a foreword by Ray P. Holland and is illustrated with colored plates and text drawings, as well as with photographs from life by A. Radclyffe Dugmore. The scope of the book includes all the food species found in America north of the equator. The volume contains keys for ready identification, life histories of the fishes and pertinent information from the point of view of the angler. It sells for five dollars.

Under the Microscope

If you would get the most out of your microscope and know the breadth of thrills it will provide, you would do well to add to your library *Adventures with the Microscope* by Dr. Julian D. Corrington. Here is a volume that appears not to have overlooked anything about microscopes, their relative merits, their use and the wide field of observation that they provide the user. The author is the microscopist at the Frank A. Ward Foundation of Natural Science of the University of Rochester, and he writes interestingly and authoritatively on his specialty. With such a volume at one's elbow the true possibilities of the microscope are revealed. The book sells for $7.50.

New Tree Book

The trees of the Southeastern States in their variety, beauty, and landscape effect probably are not equaled by any other similar area in the world. It has been said that there are more different kinds of trees there represented than in the whole of Europe. There has just been issued a book in which are given keys and descriptions of some 227 of these native trees and 21 established trees of foreign origin. It is entitled *Trees of the Southeastern States, including Virginia, North Carolina, South Carolina, Georgia, and Northern Florida,* by Dr. William Chambers Coker and Dr. Henry Roland Totten, both of the University of North Carolina. Published at $2.00 per copy by the University of North Carolina Press at Chapel Hill, this book of 390 pages has been prepared for the use of either the skilled amateur or the professional botanist. Nearly all the descriptions are accompanied by drawings showing typical leaves, flowers, and fruit. There is a key to all the genera, and separate keys of the species under each genus. Both common names and scientific names are indicated as well as information on the distribution of rare local trees and native shrubs which occasionally reach tree size. Even dimensions of some of the unusually large individual trees occasionally are given, and in a few instances suggestions are given as to the desirability of certain trees for use in ornamental plantings in given areas. The bibliography of 33 titles, the glossary, and the diversified index also add greatly to the book's usefulness.

New Book on Ferns

There are a great many people, amateur collectors, tourists, scout groups, gardeners, and other plant lovers, whose interest in ferns has prompted the publication of a little book entitled *Ferns of the Northwest,* by Dr. Theodore C. Frye of the Botany Department of the University of Washington. The area covered comprises Oregon, Washington, Idaho, British Columbia, Montana, Wyoming, and Central and Northern California. It has been prepared to supply the popular as well as the scientific demand, and for convenience of the student the latter portions have been separated from the remainder by smaller type. Consideration is given to such topics as measurements, comparison of ferns with mosses and seed plants, relationship among ferns. In addition to the detailed treatment of Pteridophytes, there are also included club mosses, quillworts, clover ferns, and horsetails. The discussion covers distribution, habitat, variety uses for decoration, for food, for drink, and for medicine. The book is published by the Metropolitan Press, Portland, Oregon, at $4.00. The range of its subject matter and the convenience of its arrangement add greatly to its usefulness.

THE HOLIDAY SEASON

is a good time for the parent to think about the coming summer holidays for his children.

To the parent who wishes to give a Christmas present, one that will always be remembered and one that will have lasting benefits, a summer at a good summer camp is decidedly the best gift.

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Who Got the Paper?

By Clara C. Pearson

George Neal, publisher of the *Orion, Michigan, Review,* had been missing his daily morning paper for more than a week. Much peeved he told his wife when next she saw Dick, the newsboy, to tell him either to leave the paper or quit coming at all. Mrs. Neal conveyed the dire threat to Dick and Dick protested that he left the paper bright and early every morning. In fact he had never missed one day. Dick decided to watch Mr. Neal's house and catch the "thief". Establishing himself on the porch of a friendly neighbor after delivering the morning paper as usual to Mr. Neal's home, Dick kept a vigilant watch. Down the alley and around the corner of the home of Homer Kelly, next-door neighbor to the Neals, trotted the family dog, Prince. Up the steps of the Neal home he went. Grasping the neatly folded daily in his jaws he sped home and delivered the paper to the back steps of his master's home, firm in the conviction that he had done a good job. The mystery was explained; Homer paid George for his papers, Dick was re-established in the good will of the Neals and peace and harmony reigned all around.

Oriole Nest

By Effie Dell Rea

One day I was resting on an old-fashioned sofa under a window shaded by a clump of lilac bushes. As I lay perfectly still, I noticed a Baltimore oriole tugging away underneath the bushes, trying to lift a damp, mud-spattered piece of grosgrain ribbon. This had been discarded by our pet cat, who disdained such ornamental trappings.

Finally the little thing flew away, and I thought she had abandoned her attempt to lift the heavy ribbon. But, no! In less then fifteen minutes she was back, with her own mate and another pair of orioles. Each took hold of the ribbon, one on each end and two in between, so that the weight was equally divided; and they flew away in perfect unison!

A few weeks later, during cherry picking time, my two brothers and I were up in a tree, when we spied the nest. Our cat's ribbon was used to bind it to a crotch in a branch. It was done evenly and artistically, through nest and over branch, over and over, till the nest was securely fastened. And hanging at each side, as if for adornment, were even ends of the ribbon!

The brood had grown and flown away. But one little, unhatched egg remained for us to treasure with the nest.

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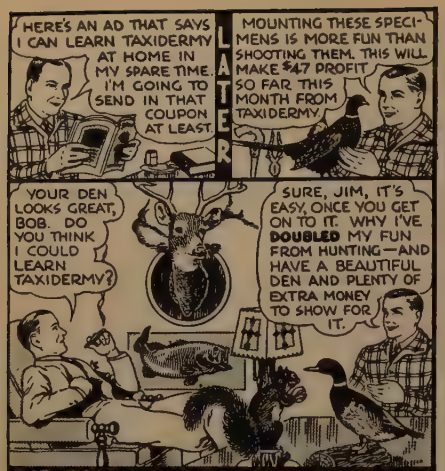
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Hummingbird Rescue

Apparently having struck an overhead wire, a hummingbird lay on the lawn, writes Mrs. Mabel A. Kuebel of Erie, Pa. Picking the bird up, she found it still living, and after holding it for a few minutes, during which time it offered no resistance, decided to feed it. A syrup of granulated sugar and hot water was made and, when lukewarm, was offered the bird in a spoon. Its long, threadlike tongue went to work as though the bird were ravenously hungry. Kept warm during the night, the next afternoon the rescued hummingbird was released in the backyard shrubbery, flew to a low branch of the althea and then away. Mrs. Kuebel says, however, that she will never forget its brief visit.

Australian Sanctuary

Tallowa Wild Life Sanctuary in New South Wales, Australia, recently proclaimed, abounds in wild life, and is a paradise for the Nature lover. A rich variety of flora grows on the area, and in many of the sequestered nooks can be heard the call of the bell-bird. Lyre-birds and bower-birds frequent the sanctuary, while the animals include kangaroos, several varieties of wallabies, native bears, wombats, opposums, and dingoes. Ocean views are a feature from the cliffs, which rise from the Shoalhaven River to a height of 1500 feet. In several sandstone caves are to be found the drawings and paintings of aborigines.

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Weaver Birds

By Mrs. Charles Rutherford

Camped near a Madiga Well in India, I thought I would investigate a last year's camping ground, near another well which they told me had been abandoned. I walked into a gorgeous experience. Abandoned! It had been by people but not by the birds. From the side of the old well grew a date palm tree, its long spikey leaves draped nearly to the water. An abandoned well, a date palm tree, quiet and relative security for weaver birds, a haven that might have been planned for them. They had lost no time in moving in, for in October of last year the well was being used for irrigation. On the thorny tips of the date leaves the weaver birds had hung their nests. When I see them hanging I think of a Christmas stocking, only hung upside down, containing an orange that makes a big bulging place on one side. The entrance is from the bottom, and the nest safely concealed in this bulge in the side.

The well may need comment as well as the birds. A strange well, this, with a palm tree hanging over it. It is really only a rough hole dug in the ground sloping down to one deep part near the perpendicular wall where the water is drawn out. They vary in size up to 25 feet across. The earth, stones, and sand dug from this hole are piled up about the sides so that one has to climb a bank perhaps ten feet in height to see the water. On this earth we sat down to watch our friends, who seemed so occupied by their own affairs that they did not see us.

We counted twenty-seven nests, and their occupants made the morning joyous with their songs and flashing wings. A swift dart and on one of these swaying nests sat a gay male bird in his mating season cap of bright yellow, his breast covered with the same gold, and from this place of vantage he told the world to keep away from this, his house, the most precious spot on earth. Other more industrious males brought long bits of fiber carried by one end. As soon as he lighted on his nest he stuck the end of the fiber into a place he thought needed strengthening and then with a swift move of his head stuck his bill into the fabric of the nest, got hold of the particular one he had just brought and pulled it through, sticking it into another place, pulled it again and so weaving it in and out, backing down the nest as he worked. Another began at the bottom and worked up. I wondered if the nests needed these extra fibers or if in their joy in the lovely morning and their joy over what they knew was inside the nest they didn't just add these bits from sheer love of doing something; just as an expression of their joy.

The sparrow-like female with a quick flash entered the nest from the bottom and was gone from sight to her work in the nest. The lower nest hung within three inches of the water and as the mother bird entered one of these we saw a splash in the water and knew that her wing or feet had touched the water. How do you suppose the baby birds are going to get out?

The twenty-seven families, though all of the nests may not have been occupied, kept the air full of their twitterings and songs and scoldings, and the voice of a bird I could not identify sang "pit' cher, pit' cher, pit' cher", and from a nearby tamarind tree an Indian tree-pie added to the din an occasional guttural "om." They said the well had been abandoned! And this was an experience granted not to royalty but to me, camped by the Madiga Well.

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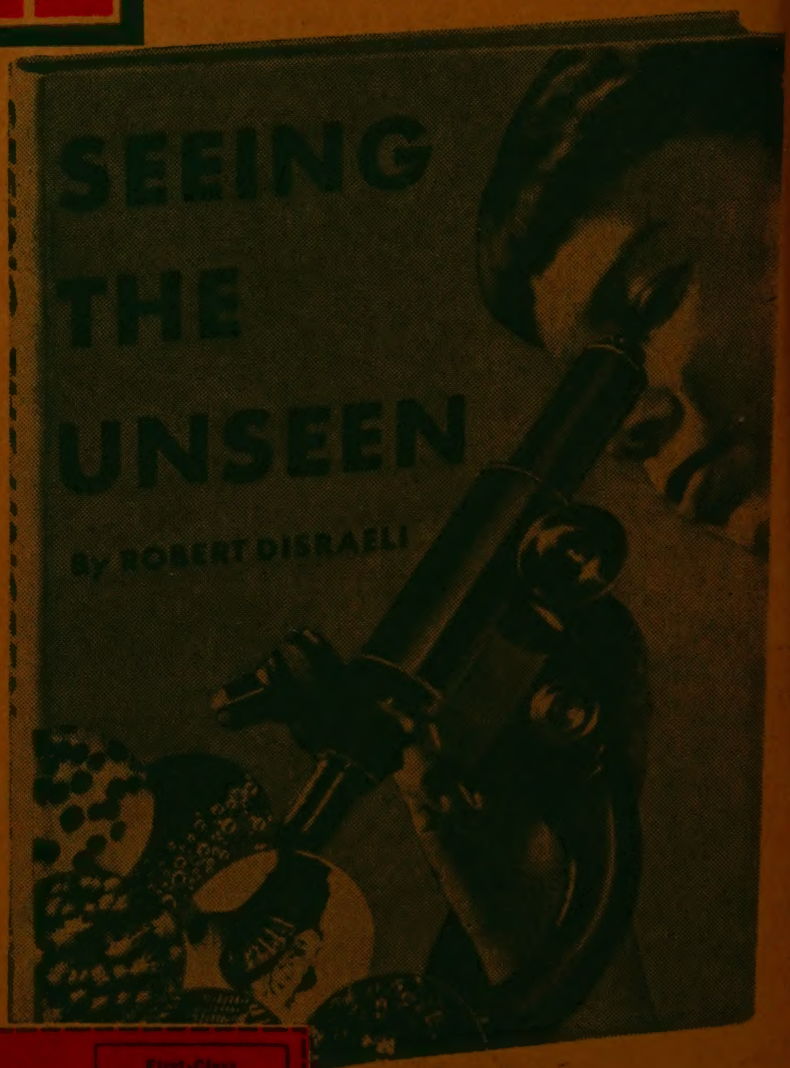

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